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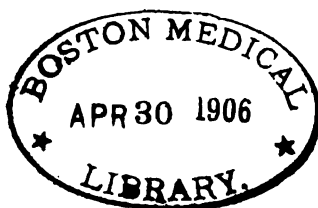
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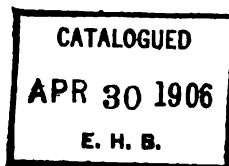


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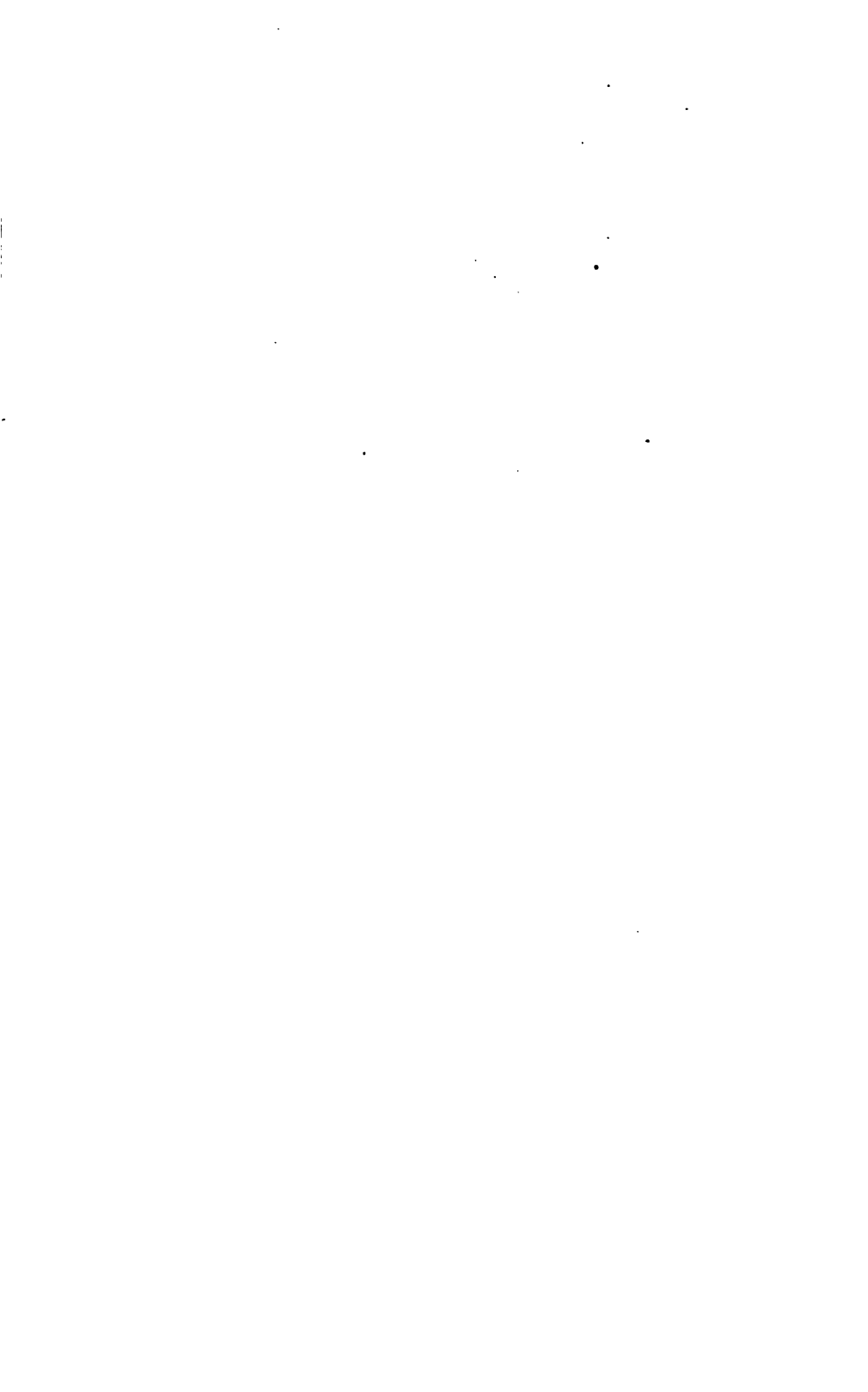
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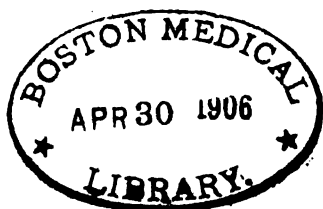
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ORIGINAL COMMUNICATIONS.

OVARIOCENTESIS VAGINALIS.—WITH A NEW METHOD OF
PERFORMING THE OPERATION.

BY E. NOEGGERATH, M.D., NEW YORK.

It is a difficult task to attempt (as I intend to do in these pages) to treat of, and to put into a favorable light, an operation which is so generally looked upon with a degree of mistrust unwarrantable by a careful analysis of its merits. It has been slighted both by authors and surgeons. Several circumstances have contributed to bring about this result. Prominent writers on gynæcology, with the exception of Kiwisch and Scanzoni, did not give it their sanction in any decisive manner; the cases published by the former were few in number, those of Scanzoni never reported in detail.

In the hands of others the operation had not been so successful as it was expected to be when the first cases had been published ; the indications for its performance were limited to a very small percentage, and finally, there existed various and grave dangers in its performance, partly owing to the manner of operating, partly to the imperfect methods employed in the after-treatment.

I shall first give a short historical exposé of the operation up to the time when it was almost abandoned in Europe, and taken hold of again by physicians in New York. The cases operated upon in this city, most of them published here for the first time, will then be described in detail, the two last ones containing a full report of my own method of operating, to conclude with a few remarks on the value of the operation, and a statistical table covering all the cases that have come to my knowledge.

The puncture of cystoid tumors of the ovary through the vagina has been rarely practised, except when, by their protrusion into the vaginal cavity, they have obstructed the progress of labor. The first operation of this latter kind related in the English medical literature was performed by Dr. Ford, the patient surviving the operation six months (Denman). In the *Medico-Chirur. Trans.*, vol. 7, Mr. Park details the histories of several cases in which ovarian tumors complicated labor ; and in three he resorted to the puncture of the cyst through the vagina ; all recovered. Subsequently Dr. Merriman reported similar cases in the same journal.

But the operation of puncture through the vagina,

for the purpose of effecting a radical cure of these growths, independently of their connection with parturition, though attended with a fair average of success, has met with little favor, and is not even mentioned in most surgical treatises.

The first operator was Callisen, who punctured the vagina, both for the relief of ascites and encysted dropsy. The operation seems, however, to have been discussed before Callisen, for on the occasion of Marcan, a surgeon of Turin, communicating an operation of this kind to the Académie de Chirurgie of Paris, in 1788, Mr. M. Allen reminded this body that he himself had presented a memoir in 1776, wherein he recommended puncturing ovarian cysts through the vagina, in preference to any other part. The operation has, during the last twenty years, been more frequently performed than previously. In a memoir by Mr. Tavignot, entitled *de l'Hydropisie enkystée de l'Ovaire et du traitement qui lui est applicable (l'Expérience, No. 160, 1840)*, four cases are related. In one the cyst was punctured to facilitate parturition, and the patient recovered. The second was undertaken, but unsuccessfully, to effect a radical cure. The other two were operated upon by Récamier and Michon, and both proved fatal. One was attacked with peritonitis and pneumonia; in the other, upon attempting a second puncture, the instrument entered the peritoneal cavity. In an elaborate monograph, entitled: *Des Tumeurs fluctuantes du petit Bassin, et de leur Ouverture pratiquée par le vagin*, by Hippolyte Bourdon, several successful cases are recorded, and the operation is strongly advocated. In Great Britain the operation has been rarely

recorded, although English surgeons early recognized the necessity of puncturing ovarian cysts when they obstructed labor. An operation for the cure of ovarian dropsy is related in the *Archives Générales*, as having been performed in the Middlesex Hospital, London. Mr. Ogden reported a case in the *Lond. Med. Gaz.*, May, 1840, page 348, in which he punctured an ovarian tumor through the vagina, which, by its pressure, caused complete retention of urine. The discharge from the ovarian tumor continued several days, and, when it ceased, no re-accumulation of fluid followed, the cure remaining complete. These historical remarks are taken from Dr. Menninger's article on tapping ovarian cysts through the vagina, published in the July number of the *New York Journal of Medicine*, etc., 1854.

The operation on ovarian cysts through the vagina was performed for the first time in Germany by Dr. I. F. Henckel, during the middle of the last century. He was the first who proposed to keep the wound open by a canula. Henckel's experiment was not followed by other surgeons until one hundred years later, when Dr. Karl Schwabe, of Ruckstedt, opened a cyst through the vagina, and left a canula inside of it for its drainage. In a patient twenty-nine years of age, who suffered from ovarian dropsy, and in whom the disease had already made considerable advance, Dr. Schwabe punctured the cyst per vaginam in the year 1836, and, after ten quarts of a greenish liquid had been discharged, he passed an elastic catheter into the cavity; through the same a clear yellowish secretion came out during the first week, which gradually became thicker, and

assumed a purulent character. A fortnight after the operation, the catheter was removed. With the aid of tonics, the patient recovered her strength so fully that Dr. Schwabe found her in perfect health, and capable of doing the hardest kind of work, six years after the operation.

Dr. Schwabe had discussed the advantage of this operation in an article published in *Hufeland's Journal für praktische Heilkunde*, Dec. 1841, page 81; and still Dr. Kiwisch described the same method four years later under his own name. The only modification which was original with Kiwisch, was the fact that he made use of the mouth-piece of a syringe instead of a catheter to give vent to the discharge, and this was even of questionable value, since he had to enlarge the original puncture with the knife in order to admit the bulbous end of his canula. If therefore we cannot ascribe the priority of this method to Dr. Kiwisch, we must consider him as its most enthusiastic and important advocate.

Dr. Kiwisch reported in the *Prager Vierteljahrschrift*, Bd. X., page 87, the following successful case of operation. A peasant woman, thirty years old, had an ovarian cyst the size of an adult's head; on account of obstinate retention of urine, the radical operation became imperative; the cyst presented low down in the pelvis, and explorative puncture through the vagina, performed on the 20th of July, 1844, gave exit to nine pounds of a chocolate-colored liquid. The canula remained for thirty hours. Ten days afterwards the cyst had regained its former size, and therefore the second puncture for radical operation was performed on the

30th of July. On this occasion several pounds of a very fetid bloody fluid were discharged, the wound was dilated sufficiently to admit the forefinger into the cyst, and a large canula, made of tin, was passed inside of it. During the first two weeks there was a constant flow of sanious matter, with the symptoms of severe feverish reaction; after this the patient began to recover, the discharge diminished and assumed a more benign character. Four weeks later, the canula was removed, the purulent secretion ceased, the wound began to close, and the patient was discharged forty days after the operation. Dr. Kiwisch saw this patient afterwards enjoying the best of health.

The number of unsuccessful cases was much larger than that in which the operation had proved successful. Henckel's patient, mentioned above, who had been suffering from ovarian dropsy for three years, died after the operation. Kiwisch himself lost his second case in consequence of peritonitis and septicæmia. Prof. B. Langenbeck operated on the first November, 1863, on a patient 28 years of age, who had been suffering from hydrops ovarii for the last ten months, and who had been punctured once before. The tumor was but slightly movable, the abdomen not tender under pressure, and the general state of health not much influenced by disease. By the vaginal puncture, twenty pounds of a greenish, opaque, albuminous liquid were discharged; two or three ounces of it came away through the catheter during the two following days; on the fourth and fifth day the flow was of a decidedly purulent character; the cyst was injected every day with lukewarm

water. During the first two weeks after the operation the general health of the patient was quite satisfactory; no trace of peritonitis, fever very slight, and pulse only 96 to 100 in the minute. During the third week, however, there was loss of appetite, nausea, and afterwards vomiting of light green, slimy, bilious matter. At the same time the patient began to lose her strength, and the matter discharged became thin and offensive on the twentieth day. To remedy this, daily injections of a solution of nitr. of silver (1 gr. to the ounce) were made, followed by injections of chamomile tea. For a short while after, the patient began to feel better; during the first days of September, a thick, yellow pus was again discharged, which showed no trace of detritus under the microscope. The pulse fell to 92 or 96 in a minute. From the 6th of December the patient grew decidedly worse, the vomiting returned in short intervals, food as well as medicines were thrown out from the stomach, only coffee and madeira were retained in teaspoonful doses. The strength of the patient faded away in a very short time, the pulse became small and rapid, from 112 to 116 in the minute, extreme emaciation, decubitus, in short, the patient exhibited all the symptoms of general collapse. The discharge from the cyst was copious, thin, and offensive. The solution of nitr. of silver was increased in strength up to 10 gr. to the ounce. Thence the amount of discharge becomes smaller, and ceased at last entirely. Sleep and appetite were wanting; the pulse grew smaller and more frequent, 124 to 130 in a minute; the administration of musk was no longer able to prevent the final catastrophe. On

the 13th of December the patient died from extreme exhaustion, six weeks after the operation.

The result of the post-mortem examination proved the absence of any attempt of the cyst-walls to form permanent adhesion by an inflammatory process. First of all it was found, on opening the abdominal cavity, that the anterior wall of the cyst was intimately adherent with the abdominal parietes; from the posterior surface of the sac, firm cellular bands extended up to the omentum, from its upper edge to the right lobe of the liver, and from its right side to the cæcum. These adhesions with the last-named organs were of a decidedly older date, so that even the attempt of extirpating the sac would have proved a failure. The extensive agglutination of the cyst with the abdominal wall was, however, of a recent date, with the exception of three or four firmer bands, because these adhesions were loose, and provided with very small newly-formed vessels. Round about the opening made by the trocar, the sac was pretty firmly attached to the peritoneal lining by plastic exudations. The normal uterus, the right (healthy) ovary, and the right Fallopian tube were adherent with each other and with the rectum by false membranes; towards the left, and behind the uterus, there was found an encysted retro-peritoneal abscess the size of a small apple, which contained a thin, decomposed pus. No further traces of peritonitis were found, and none of the intestines were covered by lymph. The diseased ovary was the left one. The sac was of an oval shape, its long diameter measuring $6\frac{1}{2}$ inches, its horizontal diameter $3\frac{1}{2}$ inches. The cyst had

grown during its development from the left towards the right side, so much so that the right section of the abdomen appeared to be most distended during lifetime. The wall of the cyst consisted of a very thick cellular tissue; it was attached to the left and upper wall of the uterus by a pedicle half an inch in diameter. The posterior wall exhibited a depression running along almost the entire length of the sac to the depth of an inch, from the base of which a tumor arose pointing into the cavity of the cyst itself. In this excavation of the sac was located the left Fallopian tube, which was considerably enlarged, and could be easily traced up to its uterine attachment. The inner surface of the sac appeared to be rough, with slightly convoluted elevations; not the slightest trace of any adhesions or agglutination of the cyst-walls were to be seen; their entire surface, however, was coated by a layer of lymph about $1\frac{1}{2}$ lines in thickness, which could be easily separated from the wall of the sac. This deposit was of the same character as the so-called lymphatic bands on an inflamed pleura, those sections in immediate contact with the cyst being already very vascular, while the upper strata were not provided with vessels, and had more the appearance of coagulated fibrin. From the inner surface of the sac protruded a solid tumor of an irregular shape, three inches in length and one inch in thickness, which, on being laid open by the knife, exhibited a whitish, dense stroma, containing a grayish-red colloid matter. This tumor appeared to be the degenerated ovary. On the inner surface of the sac were dispersed here and there small colloid cysts, from the size of a pea to that of a walnut.

At about the same time, Prof. Langenbeck applied the same method in one of his private patients. The result proved that the air in the hospital (the operation related above was performed in the Clinic) was not the cause of the unfortunate termination in the first case; for the patient treated in the city died under almost the same circumstances as that in the hospital. In this instance the puncture was made through the vagina, and an elastic catheter kept in the wound for three weeks; still the cyst filled with sanious matter. The cyst was punctured a second time, and the catheter replaced. But the patient died three days afterwards from inanition, being unable to keep the smallest amount of food in her stomach. In this case the fatal result was also caused by excessive decomposition of the contents of the cyst and absorption of septic matter. Dr. Credé has performed the same operation on three different occasions. Two of his patients died under circumstances similar to those just related, one was saved.

With regard to the management of Dr. Langenbeck's cases, I will state that, in my opinion, the injections in the first instance were made by far too late to divert the effects of the far advanced stage of septic poisoning of the blood. The remedy itself, used for injection (argent. nitr. gr. j. to water \bar{z} j., and later, gr. x. to \bar{z} j.) was not the proper one to sufficiently modify the secretion. I have tried solutions of nitrate of silver under similar circumstances, but became soon convinced of their utter uselessness. A few hours after their application the odor of the discharge is just as offensive as before the injection. But even if this salt possessed the desirable

effect, the solutions employed were not sufficiently strong to modify the character of the secreting membrane. Consequently the layer of exudation, which we hope to bring about by a properly conducted after-treatment, was too thin, and a final conglutination of the cyst-walls could not be expected. Adhesions, existing to the extent described in the first case, ought not to be looked at as a bar to the performance of the operation. I have found that although they prevent a collapse of the cyst towards its centre or lower section, a close apposition of the anterior with the posterior wall of the sac throughout its full extent, with final agglutination and gradual atrophy of the cyst-walls, takes place. I was enabled to observe this proceeding in two cases, where I operated according to Le Dran's method, and where the adhesions were as extensive as they could possibly be.

In the second of Professor Langenbeck's cases the catheter was removed too soon, so that the cyst closed up, causing absorption of ichorous matter. No attempt was even made to alter the secretion by any kind of injection.

The description of the operative procedure which Kiwisch published in his *Klinische Vortraege über spec. Pathol. und Ther. der Krankh. des weibl. Geschlechtes*, B. II., part of which treatise has been translated by J. Clay in 1860, is given in the following words:—"In order to answer the purpose intended by us, the cyst is opened through the wall of the vagina to such an extent that a finger can be easily introduced through the wound. After evacuation has been effected, a strong, long uterine tube with a bulbous ex-

tremity is introduced into the cyst, and fastened in front of the genital organs, and left for several weeks, until diminution of the cavity of the cyst takes place, which process is accelerated by the daily injection of warm water." The further procedure in this operation was generally as follows: first of all, Kiwisch made an explorative puncture, in order to be certain that the cyst be unilocular. After it had refilled, the patient, after proper evacuation of the bladder and rectum, was placed in the position for lithotomy. An assistant undertook the compression of the cyst in the lower abdominal region; a second provided for the reception of the fluid and the fixing of the legs. By means of the uterine sound he ascertained the position of the uterus, which was invariably pushed forwards, and by exploration with the finger the condition of the rectum was determined. Between these lay the cyst to be opened, pressing down the vaginal floor more or less deeply. The operator now placed the index-finger of the right hand on that portion of the vaginal wall where fluctuation was most distinct, or where the cyst projected most. In order to make this easier, the assistant made strong pressure upon the cyst from the abdominal region. In opening the cyst he used a long curved trocar, which was pressed with the point drawn back on the fluctuating place, and then plunged into the tumor, in the direction of the axis of the pelvis, till the canula penetrated about half an inch into the cavity of the cyst. The resistance which the tumor offered was often not inconsiderable, because its thickest part generally lay lowermost. When the trocar was withdrawn and

the canula left, the discharge of the fluid demonstrated the immediate success of the operation. Without evacuating much, Kiwisch now proceeded to the second stage of the operation—that is, to the widening of the orifice. With this intention he introduced a long metal director, expressly made for the purpose, which corresponded exactly to the curve of the canula and without a handle, through the canula as deep into the cyst as it would go. He then withdrew the canula, and guided a long, narrow, probe-pointed bistoury, furnished with a strong handle, along the director into the cavity. With this the wound was enlarged in the corresponding direction sufficient to allow the forefinger to pass, which was then introduced as deep as possible into the collapsing sac, in order to ascertain the condition of the internal surface and the length of the canal formed by the wound. After withdrawing the finger he introduced a long suitably-curved uterine tube through the wound deep into the cavity, with its other end fastened with a T bandage in front of the genitals.”

Immediately after the operation the patients, when laid at rest, generally felt tolerably well; but on the second or third day symptoms of inflammation of the cyst with a general and commonly severe reaction set in. During from ten to twenty days the local irritation was manifested by the discharge of ichorous fluid, and by great pain in the whole surrounding parts. In favorable cases these symptoms gradually gave place to a purulent discharge, which disappeared after a course of from five to seven weeks, and then shrivelling and perfect obliteration of the cavity took place. As long as any

secretion was produced in the cavity, and especially at the time of the discharge of the ichorous fluid, care was taken to guard against any reaccumulation of the contents, by the injection of lukewarm water through the uterine tube twice a day. The injections could not be given forcibly, otherwise they occasioned severe pain. Moreover, it was necessary, in some cases, to use copious vaginal injections, because the corroding discharges irritated the vaginal mucous membrane so much that sometimes a very painful croupous inflammation occurred. It is not advisable to remove the uterine tube until considerable decrease of the disease has taken place, because its reintroduction is very difficult and painful. However, it may so happen that the wound below the bulbous extremity of the tube becomes so narrow, that great difficulty is experienced in withdrawing it. During the greatest part of the treatment the patients are continually kept in bed, and placed under a careful dietetic regimen.

Dr. Kiwisch further remarks, that the advantages which this treatment presents are self-evident. As a general rule, by tapping in this way a perfect evacuation of the cyst is more certain to be effected and maintained, and thus a dangerous collection of ichorous fluid prevented, and atrophy of the cavity essentially encouraged. The displacement of the place of puncture is also not so readily produced in vaginal as in abdominal tapping; and the shrivelled ovary, after the completion of the case, is found nearly in its ordinary position, whence subsequent symptoms of dislocation and pathological adhesions of this organ are avoided.

Dr. West has tapped *per vaginam* in ovarian disease three times, and considers that the method is attended by more hazard than may be inferred from the writings of either Kiwisch or Scanzoni. Two of his patients recovered after the manifestation of violent inflammatory symptoms, and the third died from causes not necessarily connected with the operation. Dr. W. alleges three reasons for not operating when the cyst is of large size: first, because the bladder is sometimes prevented from rising out of the pelvic cavities, and is spread out laterally, and thus very likely to be injured in the performance of the operation; secondly, the solid matter generally found near the pedicle usually prevents the tapping from being efficient; thirdly, the greater vascularity of the pedicle presents an unusual liability to hemorrhage when a puncture is made in this region. The first objection is of no importance, since the tapping should never be performed in front, but behind the broad ligaments. Experience has taught, with regard to the second suggestion, that tapping *per vaginam* has always been efficient, with the exception of one case published in this article. The same may be said concerning hemorrhage. We only know of one instance where the patient died from the effects of bleeding.

Prof. Scanzoni, of Wurzburg, has performed the operation sixteen times. The result of his operations—of which, however, we have never received a detailed account—will be found in the statistical table at the close of this article. His first operations were performed after Kiwisch's method. Of late, however, he has used the instruments devised by Dr. J. Schnetter,

of New York, with but a slight and insignificant modification.

According to Dr. Schnetter's advice, a curved trocar is introduced through the vagina with the point drawn back, and plunged into the tumor felt through the vagina. The stilet is then withdrawn, and a knife introduced through the canula, which is an inch and a half long in the blade, and fixed upon a handle constructed according to the curve and width of the canula. The blade of the knife projects beyond the canula. The knife and the canula are now withdrawn from the wound at the same time, and the latter is now dilated to such a size by pressure on the knife that a finger can be conveniently introduced. An elastic tube, about as thick as a finger, is then inserted and bound external to the genitals.

The principal and most important merit of Dr. Schnetter, about the performance of this operation, consists not so much in the happy modification of the instruments, as in the fact that he was the first to enlarge the sphere of the operation, by applying it to cases of cysts in both ovaries, and to cysts of a multilocular nature. The details of his cases, all of which were entirely successful, are given in this paper.

CASE I.—Dr. J. Menninger's case.* Mrs. R——r, 20 years of age, midwife, emigrated from Germany to this country fifteen months ago, and has since resided in this city. She is of medium size, well formed, and, with the exception of her present ailing, enjoys good

* The New York Journal of Medicine and the Collateral Sciences, July, 1854, p. 67.

health. She had never been affected previously with any serious illness; menstruated first in her fifteenth year, and continued to do so regularly until her marriage, in her twentieth year, soon after which she became pregnant, and was delivered of a healthy female child. Her menstruation, which reappeared ten months after delivery, was regular until fifteen weeks before the day of the operation, with the exception of five months, two years since, during which period she suffered from chlorosis.

On the 25th of November, 1853, the patient was forced to take to her bed on account of abdominal pain, especially above the pubes, which she had experienced, although in a less degree, during the previous week. These pains were aggravated by motion, and still more in the effort to evacuate the bladder and the bowels. On the morning of the 26th, Dr. Menninger saw the patient for the first time. In addition to the above-mentioned symptoms, she now complained particularly of frequent vomiting, from which she had suffered during the previous night, and which had greatly increased the pain in the abdomen. The tongue was thickly coated, appetite gone, and the pulse accelerated.

Ordered an effervescing draught of carbonate of potash and citric acid, which relieved the vomiting and pain until evening, when both returned, with little less severity than the night before. Upon examining the abdomen, I discovered, just above the pubes on the left side, a small, resistant tumor, which was painful, but not markedly more so than the rest of the abdomen. The patient thought herself pregnant, because the menses

had not appeared in about eight weeks ; but this circumstance did not appear to account for all the symptoms present. The diagnosis remained uncertain. I ordered the use of poultices, which gave temporary relief during the night, but on the following morning I found her condition as unfavorable as before. I prescribed calomel, twelve grains, divided into eight doses, and followed it with an emulsion of castor oil and manna ; this produced a free evacuation of the bowels, and, in consequence, some relief of pain.

On the 29th of November the catamenia reappeared, just two months after her last menstruation. The vomiting and pain ceased, and the tumor seemed to enlarge. In the afternoon a membranous mass was discharged, which had the appearance of an ovum in the second month of pregnancy. On the following day the former pains returned ; the bleeding ceased ; the pulse was 90, and small ; the patient felt very weak, and had not been able to obtain sleep for five days.

A more careful examination became necessary, and I now for the first time made a careful exploration of the contents of the pelvis per vaginam. I found that the tumor on the median line above the pubes was the same which I had felt three days before more deeply on the left side ; that it extended to the left side ; or rather, that the tumor, situated deeply on the left side, extended, by enlargement, to the middle and right side. It also rose upward, above the symphysis, three fingers in breadth. The tumor was felt protruding into the vagina, pushing the uterus slightly downwards and towards the right side. The diagnosis was, a tumor of the

ovary, the nature of which remained to be determined, although its hardness and equal elasticity, its rapid growth, and the evidences gained from palpation and percussion, seemed to indicate fluid contents. After the employment of various external and internal remedies, I found that the best means of relieving the symptoms were the administration of aperients, and the application of poultices.

After some weeks the pain occasioned by the evacuation of the bowels and bladder ceased, and the patient felt well while lying in bed. The appetite had gradually improved, but she was still emaciated. In the mean time I observed that the tumor was constantly enlarging. It extended upward to the umbilicus, and on the right side nearly to the crest of the ileum; it was symmetrical in its extent and elasticity, and but one cyst could be distinguished. Still, there was an indistinct feeling on the right side, above the pubes, as if there were two tumors, one lying above the other, the upper edge of the lower one being perceptible below the edge of the other. Fluctuation could be distinctly perceived through the vagina, but not at all through the abdominal parietes; it was most distinct when the finger, introduced into the vagina, was pressed against the tumor, and percussion was made externally. On the 25th of December the menses appeared exactly at the regular period, and on their cessation the patient felt better, and began to walk about; she attended several cases of midwifery during the last days of December, but this aggravated her symptoms so much as to compel her to take to her bed again. On the 7th of January, 1854,

Dr. Schnetter saw the patient, confirmed the diagnosis, and agreed as to the plan of operation. The patient was now failing rapidly; she had profuse perspirations, and the weight of the tumor was a great burden. She herself estimated the circumference of the abdomen at the lower part equal to the seventh month of pregnancy; but the tumor did not rise above the navel; the abdomen was broader and less round and high than is usual in the sixth or seventh month of pregnancy.

The operation which I designed to perform was a slight modification of the one proposed by Kiwisch, viz.: puncture of the cyst through the vagina, enlargement of the wound, the insertion of a tube, and the injection of warm water to wash out the matter until the entire destruction of the cyst by suppuration had taken place.

Operation.—On the 13th of January I proceeded to operate, with the assistance of Dr. Boldemann. The patient was placed across the bed, the hips being brought near its edge, her feet resting on chairs, and chloroform administered. I then introduced a curved trocar and canula into the vagina, and, guided by the index-finger of the left hand to the most prominent point of the tumor, I plunged then into the cyst. The trocar was now removed, and a gush of fluid followed. The canula was retained; through the latter I then introduced a bistoury, curved upon the side, with a button as described by Recamier, and, withdrawing the canula sufficiently to allow the cutting edge to incise the wound, I proceeded to enlarge the opening, managing the instrument with the right hand, and guiding its blade with

the left index-finger. The walls of the cyst were very thick, and were cut with difficulty. Removing now the bistoury, I again pushed the canula forward into the wound, and through it past the sound, which served as a guide to the introduction of a tube into the cyst after the removal of the canula. This was a piece of an elastic stomach-tube, about ten inches long and more than one-third of an inch thick, and was retained in the wound to afford an exit to the contents of the cyst. The operation was completed in about twenty minutes. The fluid discharged measured nearly two quarts, had the consistency of thick pus, and was of a chocolate color. On examining it under the microscope, it was found to consist principally of shrivelled blood-corpuscles, pus-globules, and epithelial cells.

Upon recovering from the state of anæsthesia, the patient felt well, and complained only of a slight soreness at the point where the puncture had been made. There was no reaction following the operation on this or any subsequent day; she took half of a Seidlitz powder daily, as before the operation, until her convalescence. On the following day, the amount of fluid which escaped from the tube and vagina since the operation was six or eight ounces. The secretion was purulent, and the tumor was still found to extend midway between the pubes and navel. On the second day I found my patient in good condition; had slept well, but the matter discharged was more ichorous, and had a penetrating odor. Injections of warm chamomile tea through the tube produced a better secretion, and the bad odor of the discharge disappeared. On the third

day I changed the tube for a large catheter, through which, however, the purulent matter did not find so ready an escape. The patient continued to do well until the sixth day, when she began to complain for the first time, and there was evidently some febrile excitement. On the seventh day her condition was much more unfavorable; the pulse 125, small; great prostration; tendency to faintness, and slight delirium during the night. Conjecturing that these symptoms were due to retention of the purulent discharge from the cyst, I immediately withdrew the catheter, which gave exit to a large quantity of matter. A wider tube was now inserted, and injections more frequently made. Her condition improved, and on the following day she complained only of weakness. I ordered a decoction of cinchona and sulphuric acid, with liquor anodyne, from which the patient derived very marked benefit; in two or three days after, she expressed herself as feeling quite well. The discharge up to the present time averaged one or two ounces in twenty-four hours; during the last night, however, it amounted to nearly a quart in a sudden eruption.

On the night of the 22d of January, the tube had slipped from the wound unknown to the patient, while she was sleeping soundly; so much time had now elapsed, that I failed in my efforts to reintroduce the tube. Both finger and tube could be readily passed through the wound in the vagina, but a careful and prolonged search for the opening in the cyst proved unavailing, since the two wounds were no longer apposed. I ordered large injections to be made into the

vagina, while at the same time a napkin was applied to the vulva to prevent its escape. By this means I had the satisfaction of seeing pus escape freely with the injection, the latter having evidently penetrated to the cavity of the cyst. On the following day I endeavored again to introduce the tube, but without success; this attempt was repeated two or three times after, but, as the purulent discharge became free, I desisted, satisfying myself simply that the opening into the vagina was patulous. On the twelfth day after the operation, and the third after the escape of the tube from the cyst, nearly two quarts of purulent fluid were discharged with a sudden gush. The quality of this matter differed from that discharged during the operation only in being of a more purulent character. From this time only one or two ounces came away daily, and the improvement in the health of the patient was proof that there was now no retention of pus.

I cannot explain these two copious and sudden discharges, the one on the night of the 20th, and the other on the 25th, more plausibly than by supposing that each was the result of the rupture of an adjacent cyst, the walls of which had become thinned by ulceration. The local changes which, on examination, were found to have taken place, confirmed this opinion. The uterus immediately regained its normal position in the median line, the tumor was diminished to the size of a hen's egg, and the discharge from the vagina became much less. The strength of the patient increased in a degree proportionate to the diminution of the discharge. About the 6th of February, the patient was

able to be out of bed during most of the time, and the discharge had become insignificant. On the 23d menstruation set in, after which every sign of the former discharge disappeared, nor could a careful digital examination detect any remains of the disease. The patient improved steadily, and, although she had not recovered her former strength, she returned to her daily duties.

Up to the present time, June 3d, 1854, the patient has continued well, with the exception that she was taken ill with a slight fever, gastric symptoms, and enlargement of the liver, in March, and again in May. The first attack confined her to bed three days; the last only one. The liver, remained enlarged and hard for several days each time. Exposure to cold and mental excitement seemed to be the cause of these attacks. I examined her a few days since, and could discover no trace of her former difficulty.

CASE II.—Mrs. Anna Schnoes, 25 years old, born in Germany, and a resident of this city for the last three years, called upon Dr. Schnetter on August 21st, 1851. She looks pale and sickly, but not emaciated. About a year ago, she was delivered with the forceps of a child after a very tedious labor. Mrs. S. was in poor health for some time before pregnancy took place, suffering from dysmenorrhœa, constipation, and vomiting. Her abdomen was unusually large during gestation, and failed to resume its former size after delivery. Two days after the birth of the child she was taken with symptoms of acute peritonitis, which disappeared under proper treatment, but the patient never regained her former health,

suffering from abdominal pain, dysuria, etc., and while her body began to emaciate, the abdomen became enlarged. When Mrs. S. called upon the doctor she presented the following appearance: abdomen extended to the size of one in the eighth month of pregnancy, the right side more so than the left. By palpation a round tumor was discovered, reaching three or four inches above the umbilicus, located in the right abdominal cavity, and extending beyond the linea alba for about five inches. The tumor was rather hard, but not painful on being touched.

Vaginal examination: Slight leucorrhœa, vaginal neck in the centre of the pelvis, neither lower nor higher than usual; it was considerably hypertrophied, lacerated on both sides, and covered with granulations, os patulous. On the right side of and behind the uterus, a distinct, round, rather hard tumor could be touched with the finger. The sound was passed inside the canal of the womb with ease for the length of $3\frac{1}{2}$ inches; the body of the womb showed a double curve, one forward towards the symphysis pubis, and one towards the left side; the uterus was movable only to a slight extent, and every attempt to change its position very painful to the patient. Very indistinct fluctuation could be perceived on either the upper or lower aspect of the tumor.

Diagnosis: Monocystic tumor of the right ovary. The febrile condition which has existed for several months past, made it probable that the contents of the cyst were of a purulent character.

The operation was performed on the 30th of September, 1851, with the assistance of Drs. Henschel and

Boldemann, of this city. The patient, after being thoroughly narcotized, was placed in the position for lithotomy. Now the tumor was pressed downwards as far as possible, a curved trocar introduced into the vagina, and thrust into the protruding portion of the cyst, the puncture being made as far as possible towards the right wall of the pelvis. Upon withdrawing the trocar, a few ounces of thick, discolored pus were discharged. The canula was kept in place, and a knife (Fig. 1) introduced through the same, which filled exactly its width and curvature. The cutting edge of the bistoury, when in situ, protruded above the upper end of the canula for about an inch and a half, and the same was directed so as to face the neck of the uterus. Both canula and knife were now drawn downwards, and the wound enlarged by forcing the cutting edge towards the left. On removing the instrument, the incision



FIG. 1.

was found large enough to introduce a finger with perfect ease. Very little blood was lost during the entire proceeding. A large-sized elastic canula was then passed into the cyst, and kept in place by an apparatus outside the external organs.

For the first six days the reaction which followed the

operation was very insignificant; neither fever nor pain was observed to any great extent. The discharge through the canula was of a muco-purulent character, amounting to only a few ounces through the day. With the exception of occasional vomiting, no unfavorable symptom occurred until the 6th of October, when she was suddenly seized with frequent vomiting, severe abdominal pain, marked collapse, restlessness, profuse perspiration, and violent fever; the discharge, however, remained unaltered. On the 16th of October the old canula was removed, and in its stead an elastic catheter, No. 12, passed up to about four inches above the incision. Upon compressing the tumor through the abdominal parietes, about four pounds of a thick, yellowish, gelatinous, very offensive liquid was evacuated through the catheter, and the swelling in the abdomen seemed to shrink to a considerable extent. This evacuation continued for about two weeks; fever and other symptoms mentioned above continued throughout this time. On the 20th of October no trace of the tumor was left in the peritoneal cavity; the abdomen was soft, and almost without pain upon examination. During the night, while the patient was in the act of changing her position, a large amount of decomposed matter came away through the catheter. Now the fever left her entirely, appetite and spontaneous alvine evacuations returned, and she left her bed soon afterwards.

The canula was now removed every day for the purpose of cleaning, and the patient ordered the use of warm baths. Since it became very difficult to keep the canula in its proper position by attaching it outside,

near the vulva, it was replaced by Kiwisch's intra-uterine spring pessary for the treatment of dislocations.

At the beginning of December this latter instrument was withdrawn, and the wound closed up entirely, after having discharged a small quantity of a non-offensive muco-purulent matter for about two weeks. Menstruation up to that time had not yet appeared.

For a month the patient was not under treatment.

On the 20th of January, 1852, Mrs. S. was again in need of medical advice on account of very obstinate constipation, continued vomiting, and severe pain in the left iliac region. The abdomen was puffed up, but yielded, on percussion, a tympanitic sound, with the exception of the left epigastric region, where it is dull. No distinct outlines of a tumor can be perceived. The ordinary means for obtaining an evacuation failed entirely; and it was not until the tenth day, when a dose of one drop of croton oil, repeated every two hours, produced the desired effect, and removed both the vomiting and the tympanitic swelling of the abdomen.

By a careful examination of the abdomen, the presence of a tumor, hitherto unnoticed, could be perceived in the left section of the pelvic cavity, its upper edge passing above the ramus pubis for about three inches, and reaching laterally up to the median line. It appeared to be a hard, oval, immovable swelling, without any sign of fluctuation. An examination per vaginam revealed the presence of a tumor in the left vaginal cul-de-sac, extending posteriorly towards Douglas's space. The body of the uterus was pushed forward and considerably toward the right side. Uterus immovable.

Diagnosis: Cystic tumor of the left ovary.

On the 2d of February the operation above described was performed, for the second time, on the left side, with this difference, however, that the puncture was made close to the neck of the uterus, the incision being carried towards the left side.

A small quantity of a sero-sanguineous liquid was discharged, and the tumor did not collapse. Reaction during the first four days insignificant; after this, considerable fever, with all the symptoms as mentioned in the first operation. From the sixth day a copious discharge of a decomposed liquid, mixed with deposits of lymph and gelatinous matter. The tumor began to decrease steadily, until nothing was left but a swelling of the size of a large fist in the left iliac region.

The patient, however, failed to recover her health: loss of appetite, fever, and emaciation remained. On the 15th of February, very obstinate vomiting from indigestion brought her near the brink of the grave, and it took very large doses of morphia to settle her stomach. From this time she steadily but very slowly gained in strength.

The wound, originally located on the left side of the uterus, moved gradually behind the neck, while a tumor began to develop from the left side of the pelvis. On passing a sound through the not yet entirely obliterated fistulous wound, it became evident that the tumor just mentioned was another cyst in a stage of rapid development. On the 5th of March this third tumor was punctured; symptoms and treatment following the operation were the same as in the former instances.

After it had been evacuated the abdomen appeared smooth and soft; no further swelling could be perceived. The last two openings were not allowed to be closed until late in the month of July.

The patient left soon after this for the country, where she acquired the full vigor of her former health. The menses made their appearance in August, and returned after this in regular intervals.

If we compare the results of examination before, during, and after the operation, we can establish the following facts:—

The cystic tumor of the right side consisted of two large and two smaller compartments, and the contents of the former were of a thick, gelatinous character. The few ounces of pus evacuated with the first puncture, probably deposited in the pelvic cavity outside of the cyst, had originated probably during the attack of puerperal peritonitis, mentioned above.

The cystic degeneration of the left ovary, which arose a few months after the operation had been performed on the right side, developed itself very rapidly with symptoms of peritonitis. The cyst contained two compartments of about equal size, with gelatinous contents.

The operation was followed, as is usually the case when performed on tumors of the same character, such as struma, etc., by symptoms of severe inflammation and gangrenous destruction of the lining membrane. The extent, however, to which the inflammatory process spread was different on each side; that on the right extending to both sections, while only one compartment

was comprised in the destructive process after the first operation on the left side. This latter fact we would venture to explain by the comparatively greater thickness of the partition-wall between the two cysts. The smaller cyst on the right side, which yielded only a serous fluid, collapsed and shrunk after a simple puncture with the trocar.

The process of healing was of rather short duration on the right side, while the smaller tumors on the left side were not so readily destroyed, which was owing principally to the imperfect recovery of strength on the part of the patient, in consequence of the first operations.

CASE III.—Miss Pelagia N., 22 years old, a native of Poland, had her first menses at the age of 17 years, without any inconvenience; nor was she ever sick up to the beginning of the year 1857, when the usually normal flow of menstruation ceased to make its appearance, with the exception of a few drops of blood. At the same time her appetite began to fail, and she suffered from constipation and abdominal pain. She was pale, peevish at times, but not yet emaciated. In July, 1857, the existence of a swelling in the right side of the abdomen was noticed, which increased gradually during the following months; the first attack of fever occurred in December, 1857. Upon the first physical examination, in March, 1858, a pretty solid, elastic, smooth tumor was discovered in the right side of the abdomen, which extended upward to about an inch above the umbilicus. By examining through the vagina, a tumor presented itself in the right vaginal cul-de-sac, which

could be traced backwards and towards the right to a considerable extent. The neck of the uterus was located in the centre of the pelvis, but the direction of the sound, when passed inside the uterine cavity, tended evidently towards the left side. By putting the examining finger close to the protruding section of the tumor, and performing percussion on the right section of the abdomen, a very distinct fluctuation was felt through the vaginal portion of the tumor. The mobility of the tumor was very indistinct.

Diagnosis: Cystic degeneration of the right ovary.

The operation was performed on the 23d of March, 1858, in the presence of a number of medical gentlemen of this city. After the patient had been brought under the influence of chloroform, a curved trocar was passed into the tumor very close to the neck of the uterus. Upon withdrawing the points, a large quantity of purulent matter came away. Schnetter's bistoury was now introduced through the canula, its edge being directed towards the right side, when both canula and knife were pulled out, and thus the wound considerably enlarged. During this proceeding a very considerable external as well as internal hemorrhage occurred, and the cyst, which had completely collapsed, began to be extended again; pulse and respiration became small and frequent. As soon, however, as the tin canula, of about the size of a finger, had been introduced, and pressed firmly against the right angle of the wound, the hemorrhage ceased at once; the canula was kept in firm apposition to the right angle of the wound by a cotton plug. The patient recovered soon, but remained

in a somewhat weakened condition. The hemorrhage did not recur, and on the evening of the same day the coagula of blood were removed from the cyst by injections of ice-water. Neither symptoms of feverish reaction nor inflammation of the cyst were observed to any extent during the next days following the operation; soon, however, a large quantity of a fetid discharge came away from the sac. The canula was removed repeatedly, and the cyst was injected with lukewarm water. Although the discharge was very profuse, the patient left her bed soon after the operation. The cyst had decidedly shrunk, notwithstanding a pretty firm round tumor could be felt about two inches above the symphysis pubis, and especially towards the right side, but all attempts to pass the canula into this swelling proved futile. The condition of the patient remained unchanged for the next few weeks, and in order to diminish the amount of secretion, injections of tincture of iodine were repeatedly resorted to in the month of May, which, however, did not bring about the slightest alteration in the condition of the cyst. As the tumor seemed to remain stationary, notwithstanding the profuse discharge, an attempt was made to tap it through the vagina, but its tissue was of such a density that the trocar could not be pushed through its walls to any great distance, although considerable force was employed to accomplish this end. Only a small quantity of a thin, bloody serum came away after the puncture. The patient, who lived in very poor circumstances, would not submit to any further treatment in the month of

July. In 1859, I learned through one of my colleagues that Miss P. was doing very well, that she had removed the canula, whereupon the discharge had entirely ceased in a few weeks. In the month of May, 1860, the patient was again seen by Dr. Schnetter. She looked healthy and robust, and had no complaints whatever. An examination through the vagina revealed a corrugated, hard, sensitive cicatrix, and behind it a solid, movable, not painful tumor, the size of a hen's egg, could be detected by the double touch.

With regard to the treatment of this case, it may be remarked, that the canula had been allowed to remain in the cyst too long. The healing process would have been accelerated, if the retention of the canula had not protracted the inflammation and purulent secretion of the sac. The remaining tumor after the operation in the right side of the pelvis, which had probably no connection with the punctured cyst, appeared to have been a tumor of small size and of a different nature.

Besides the cases just described, Dr. Schnetter has performed the operation with his knife on *two* other occasions in this city, about eight years ago. In the one instance the cyst tapped contained dark blood, the canula was kept in the cyst only a short while, and the tumor was permanently removed. The second case was one of the colloid variety. A few days after the operation the canula inserted in the cyst was lost by the patient, and when the Doctor attempted to replace it, the opening in the vagina had so much contracted that it could not be done. The wound closed up, and after the cyst had almost regained its former size, it reopened

spontaneously, giving issue to a very fetid discharge, which lasted for a number of weeks and gradually disappeared. The cyst has meanwhile shrunk and never filled up again.

CASE VI. Mrs. B——g, 35 years old, born in Scotland, now living in the city of New York, has been enjoying a fair state of health as long as she can recollect; had never any trouble with her monthly period, and was married about fifteen years, but remained barren. For the last three years, however, she has suffered from dysuria on several occasions, the last of which attacks occurred in the earlier part of February, 1860. At that time passage of water became so much obstructed that it had to be taken away with the catheter, and there existed so much pain in the lower part of the abdomen and back, with considerable fever, that her life seemed to be in danger from acute peritonitis. About two months before the occurrence of this last sickness, she remarked that her stomach began to swell; and when she left her bed, after the attack of peritoneal inflammation had been removed, the size of the abdomen had attained such dimensions that she found it necessary to apply to several medical men of this city for advice, and thus became aware of the existence of cystic disease of the ovary. No kind of surgical interference was attempted, and the abdomen kept on growing larger and larger. Under these circumstances the patient presented herself at my office, on the 22d of April, 1860. Although her features exhibited signs of suffering, her general constitution appeared to be healthy, and even robust. On further examination I found the abdomen enlarged to

about the size of that of a woman in the seventh month of pregnancy, the greatest protuberance existing in the right side of it. Percussion of the abdomen gave a dull sound, which extended to about three inches above the umbilicus, in the right section of the stomach, while on the left it extended to a point situated about three inches below the navel. Under the abdominal walls there appeared to exist a hard, spherical mass, which evidently consisted of two distinct sections. Both portions, although connected with each other, were separated by a furrow, which ran in a diagonal direction from the left downwards to the right side. By this groove the entire mass appeared to be divided into a larger tumor on the right and a smaller one on the left side of the umbilicus. The size of the former was estimated equal to that of an adult's head, while the latter was only half as big. The right tumor conveyed unmistakable signs of fluctuation; not so the smaller tumor. By examining through the vagina, the neck of the womb appeared to be flattened and tightly pressed against the pubic bones, while the fundus uteri was perceptible right above the symphysis pubis. The space between the posterior lip of the neck and the os sacrum was occupied by a round mass, the lowest point of which was situated towards the right side, and somewhat below the os uteri. The touch of this retro-uterine tumor was painful to the patient, and made it evident that the supra-vaginal mass, and the one perceptible through the abdominal walls, were one and the same. By applying the forefinger to the most prominent part of the tumor in the vagina, and performing percussion on the summit of the right abdominal

tumor, fluctuation was very distinctly felt inside the vagina.

From the result of this examination it appeared that the patient suffered from a *multilocular cyst of the right ovary*. On the 29th day of April, 1860, the operation was performed in the following manner:—The patient having been placed across the bed, in the position for lithotomy, and chloroform having been administered, the left forefinger was introduced into the vagina, so as to touch the most prominent part of the tumor. A place situated about $\frac{3}{4}$ of an inch distant from and behind the vaginal portion, and in a line running from the symphysis pubis to the right sacro-iliac synchondrosis up to this point, the canula was introduced, its upper end pressed tightly against the tumor, and the stem of the trocar pushed through the canula. It soon became evident that the wall of the tumor was too thick to permit its perforation by a simple onward movement of the instrument. After a good deal of exertion, and by rotating the instrument while advancing, the resistance was finally overcome, and the wall of the tumor perforated with a sudden jerk. The fluid which now escaped through the canula was of a brownish-red, rather dirty color, mixed with fibrinous shreds, and amounted to about eight fluid ounces. When the discharge ceased flowing we examined the abdomen, and were astonished to find that the principal tumor, situated on the right side, which we meant to open, was undiminished in size or position, while the smaller tumor on the left side had disappeared. The question now arose, whether it would be better to leave the second cyst alone until the one

punctured had healed, or whether it had better be opened at once. We decided to adopt the latter course, the more so as the lower section of the tumor could be easily brought in contact with the upper end of the canula, located in the evacuated cyst. While an assistant held the tumor in a firm position, pressing the same at once downward, the opening of the canula was pushed against the tumor, the trocar reintroduced through the canula, and the instrument passed into the second cyst. Upon this about two quarts of a white, limpid fluid escaped through the canula with a gush; it had the appearance of the clearest spring-water. The canula was now somewhat retracted, so as to have its upper opening lodged in the lower cyst, the retaining apparatus introduced (Figs. 2 and 3), and the patient placed in a comfortable position. When the effect of the chloroform had ceased, she fell into a quiet doze, from which she awoke after a while, complaining of a slight pain in her right side, but felt easy in every other respect—pulse 76 beats in a minute. She was ordered to be kept on low diet, and to take half a grain of opium every third hour, in order to check the activity of the bowels.

9 P.M.—Commencing meteorism; abdomen painful on pressure; pulse 78; urine removed by catheter.

April 30th. 9 A.M.—Slept some during the night; pulse 80, somewhat smaller than yesterday; tympanites increased. There was very little discharge from the canula; and thinking that the latter might be obstructed by some solid concretion, I withdrew the wire from inside it, and made an injection of tepid water. As soon as the fluid had passed into the cyst the patient complained

of an acute pain in the right side of her abdomen; wind escaped from the stomach in the form of borborygmi, and she had the sensation of fainting, while at the same time the pulse grew very small, and increased in fre-



FIG. 2.



FIG. 3.

quency. The mandrin was cautiously reintroduced, and opium given in one-grain doses every two hours. At 2

P.M. the abdomen was so puffed up, that its circumference appeared as large as it was before the performance of the operation, and very painful on being touched. 9 P.M.—Inclination to vomit, severe pains, which resembled very much those observed during labor; with every throe the canula was moved forward, and retreated when the pain was over; pulse 100 beats in a minute. As I imagined that the canula, which formed a semicircle, might press against the posterior wall of the uterus, I elevated its outlet somewhat, and fixed it in this position by means of a T-bandage. This was followed by instantaneous relief to the patient.

May 1st. 9 A.M.—Has less pain, but slept little during the night; pulse eighty-five; discharge from the canula more copious, resembling thin, bloody serum. Dose of opium diminished.

7 P.M.—Patient less prostrated; pulse stronger—eighty-nine; not much pain, even on pressure of the abdomen; secretion pretty free; begins to be offensive.

May 3d. 10 A.M.—Has not slept during the night; pulse eighty-eight; increase of pain in the right side; feels weak; ordered brandy and water.

7 P.M.—Had a fainting fit, caused by the renewed intensity of pain, which extended to the right thigh; pulse small, ninety-six; the protruding portion of the canula pressed considerably against the orifice of the urethra, thus interfering with the introduction of the catheter, while the attempt to remove the outer end of the instrument from the upper wall of the vagina was followed by increased pain in the abdomen; canula (easily) removed, in order to prevent a further develop-

ment of peritonitis, and instead of it a cat-gut was placed in the opening of the cyst ; ordered two grains of opium at a dose.

May 4th.—Slept very little during the night, on account of dysuria ; pulse ninety-five ; abdomen painful on slight pressure ; the cat-gut replaced by a tin canula ; its introduction is very difficult, on account of the length, narrowness, and tenderness of the vagina.

May 5th.—Has suffered from an attack of indigestion, relieved after spontaneous vomiting and purging.

May 6th.—The canula had slipped out during the night, and the opening in the vagina had, in consequence, become so contracted that it took a long time before another cat-gut could be introduced ; abdominal pain and tenderness increased toward evening ; on removal of the cat-gut a considerable quantity of very offensive matter was discharged ; opening of the wound secured by the introduction of an elastic catheter.

May 7th.—Pretty comfortable during the night ; pulse ninety ; abdomen continued very much swollen ; plentiful discharge of serum, which is now mixed with thick pus ; metallic catheter substituted for the elastic one, which latter had become too soft to perform its duties.

May 8th.—Quiet night ; pulse eighty ; abdomen less tender ; water injected through the catheter is no longer followed by pain ; the fluid which escapes is mixed with a large amount of decayed tissue.

From this time the patient gradually began to recover her strength, although she suffered occasionally from severe attacks of colic, followed by watery discharges from the bowels. After the opening had been

enlarged by means of cat-gut, a tin canula, of a more considerable capacity than the former, was introduced, and kept in its place by an apparatus very much like that which Itard has invented for fastening the catheter in the Eustachian tube, which apparatus, however, could be dispensed with after a few days, because the canula had become fixed in its position by the constriction of the wound in the vagina. The discharge became daily thicker, and of a pale yellow tinge, and kept its sharp, offensive smell. The circumference of the abdomen decreased very slowly; on examining the same, it was evident that most of the swelling was owing to meteorism, although outlines of the former tumor could be perceived to a small extent above the symphysis pubis and towards the right side; on moving the anterior wall of the abdomen to and fro we could produce the "bruit de paille," this being an unmistakable sign of intra-peritoneal exudation.

On the 5th of June the canula was withdrawn, because the discharge had gradually become scanty. The abdomen was as yet puffed up to a considerable degree. The decrease of the secretion was, however, not lessened after the removal of the instrument in such a way as we hoped it would be; although it was trifling in the recumbent position, its amount was considerable when the patient was standing or walking. In order to promote the absorption of the lymph deposited in the peritoneal cavity, unguentum hydrargyri was rubbed over the abdomen, while the hydriod. of potassium with muriatic tincture of iron was taken internally. A very distressing symptom was the pain in the rectum preceding

and following every evacuation of the bowels, which was probably owing to adhesions formed between the rectum and the posterior aspect of the cyst-wall. The patient presented all the signs of anæmia and long suffering; she had grown very thin, looked pale, and had œdema of both legs.

In the earlier part of July the secreting cavity was explored by means of a catheter, when it became evident that a great deal of the discharge found no exit through the vagina, but was retained in the bag, which latter consisted of two distinct compartments, apparently separated one from another by a septum.

Thus it was evident that the coat lining the cavity of the cyst had transformed itself into a pyogenic membrane. In order to destroy the latter, it was concluded to make one or more injections with iodine. The patient, however, had meanwhile become so reduced in strength and so irritable that she was advised to remove to the sea-shore, in order to recover strength sufficiently to have this little operation performed with safety. After a sojourn of about four weeks in the Highlands, N. J., she returned somewhat improved in spirits and general appearance; she looked less pale, and the œdematous swelling of the legs was gone. It even appeared as if the discharge had lessened in quantity; it was thinner, and less offensive. Meanwhile she had been taking opium pills for checking the diarrhœa. As soon, however, as the opium was discontinued the stools were again relaxed, and the patient stated that she had observed the diarrhœa was most profuse when the discharge through the vagina had become scanty. Early in Octo-

ber the patient was put under the influence of chloroform, for the purpose of carefully examining the cyst and injecting a quantity of tincture of iodine. After being fully etherized, she was placed on the left side; the opening in the vagina was now exposed to view by means of a duck-bill speculum, and a catheter introduced into the cavity of the bag. Its entrance was followed immediately by a very profuse discharge of a thin, greenish-brown looking muco-purulent matter, which offered such an unmistakable smell of fæcal matter that not the least doubt was entertained of the existence of a communication of the cyst with one of the intestines. Under these circumstances the idea of making an irritant injection was given up, we considering this proceeding not only useless but even dangerous, inasmuch as the injected fluid might proceed into the intestinal canal, and give rise to either an uncontrollable enteritis, or an absorption of a large quantity of iodine.

Thus both the non-obliteration of the cyst and the diarrhoea, alternating with the vaginal discharges, were sufficiently explained. At the same time it was ascertained that the original large cysts were reduced to a mass of very small circumference, so much so that no trace of them could be detected by palpation through the abdominal walls. Whether the communication with the intestines will hereafter be closed or not, is very difficult to decide, and although this is not very likely to happen, there is no absolute denying the possibility of this occurrence.

CASE VII. Mrs. V—t, 32 years old, a healthy-looking woman, came to my office in October, 1861, by the ad-

vice of her attending physician, to consult me about the possibility of having an operation performed for the cure of ovarian dropsy. She stated that she had always been healthy until about two years ago, when she began to suffer from bearing-down pains and irregularity in her menstrual functions. At the same time the abdomen began to enlarge, until it reached at last the size which it had attained now. Upon an examination I found the abdomen to be filled up by a large fluctuating tumor, the upper end of which extended into the right hypochondriac region, while on the left side it was not quite as fully developed. On examining through the vagina the uterus was found to be retroverted, and it appeared to be impossible to reach the lower section of the tumor by the vaginal touch. Under these circumstances there existed a contra-indication against the performance of the operation in question, and I was about to advise the patient to have ovariectomy performed, when the idea struck me to replace the retroverted uterus, and thus to allow the tumor to settle down into the posterior cul-de-sac. After the sound had been passed into the canal of the body I found that the uterus could not be moved forward directly, in the ordinary manner, by depressing the handle of the instrument. I now moved the uterus toward the right and tried thus to overcome the difficulty, but I failed equally in this attempt. I next pushed the fundus of the uterus, by means of the sound, far into the left side of the pelvis, and then, sweeping it in a line corresponding with the left linea innominata, I had not the least difficulty in bringing the organ completely forward. It was then pushed upwards behind the symphysis

pubis as high as possible, and in pressing upon the abdominal tumor the same was brought down to present behind the uterus, where it could be distinctly felt with the finger. The cyst having now been carried within the sphere of our operation, Mrs. B., who lived in Long Island, moved to the city of New York, and was operated upon on the 28th of December, 1861, in the presence of Dr. Schnetter and her physician. Having been taught by the experience of my first case that the use of the long, self-retaining canula was very inconvenient for the patient, I caused a short canula to be made, with a bulbous end, which was to be kept inside without protruding from the vagina. I intended to make an opening into the sac with Dr. Schnetter's apparatus, large enough to pass the canula through the same. The patient was placed across the bed, a curved trocar was pushed into the cyst, the trocar withdrawn from the canula, and the fluid allowed to escape. It was of a dark-brown color, and slimy to the touch. Dr. Schnetter's knife was now passed through the canula into the cyst, and both canula and knife withdrawn. But in thus attempting to enlarge the opening by incision, it was found impossible to do so; both cyst and vaginal wall had collapsed to such an extent that the cutting edge of a knife found absolutely no resistance to overcome, and, no matter how hard I tried to make an incision into the tissues, I found it could not be done. In consequence the opening in the cyst was very small, and I could just introduce the small elastic catheter into the sac, for draining its contents. The lower end of the catheter, protruding from the vagina, was tied by means of a piece of tape

to the left thigh. The drainage was kept up for about six weeks. The patient suffered very little, either from the effects of the operation or from the offensive discharge. After the lapse of this time Mrs. B. was allowed to go home.

On the 1st of May, 1862, I saw her again, and found that the abdomen had regained its former size. The second operation was performed a week later. In order to avoid the mishaps of the first attempt, I had constructed a pointed hysterotome. With this instrument I passed very readily through the posterior section of the vagina into the tumor, and on opening the cutting blade and withdrawing the instrument, I made an incision large enough to admit two fingers. Unfortunately, a severe hemorrhage occurred after the operation, which could only be controlled after a long while by injections of ice-water. The loss of blood was so profuse that the patient had an attack of fainting, and felt very weak for hours afterwards. The canula above described was inserted, and gave issue to a sero-sanguinolent discharge. The pulse rose on the first day up to 130; an asthenic fever followed, from which the patient did not recover, notwithstanding the use of large doses of brandy and quinine. She died four days after the operation, from exhaustion.

CASE VIII. Mrs. Louise E—r, forty-four years old, looking pale and anæmic; has been married twenty-four years, and gave birth to a child twenty-two years ago. She first noticed a swelling of the abdomen in January, 1861. At the same time her menses became irregular, and ceased for about one year, when they reappeared, and continued

regular for the last two years. She had been suffering from severe backache while standing, and attempting to walk; great difficulty in passing the water. In the summer of 1863 she was confined to bed for a length of time, on account of phlebitis of the left limb. I was called to see Mrs. E. on the 5th of October, 1863, by Dr. Schnetter. On examining the patient, the abdomen was found considerably enlarged, the circumference, in a line running across the navel, measuring 37 inches; the distance between the ensiform cartilage and the left anterior iliac spine measuring 12 inches, and the same on the right, $10\frac{1}{2}$ inches. Two distinct tumors could be felt, one on the right, one on the left side, both reaching to the right of the epigastric region. Fluctuation distinct all over the abdomen; more so, however, on the right than on the left side. By passing the hand to and fro over the swelling of the left side, the "bruit de paille" could be distinctly felt, thus proving the existence of short yielding adhesions. On the upper section of the left tumor a number of small cystic growths could be distinctly felt. By examining through the vagina, the uterus was found to be pushed considerably forward towards the symphysis pubis, the space between the same and the os sacrum being filled up by a large fluctuating mass.

The operation was performed on the 12th of October, with the assistance of Dr. Schnetter. The large self-retaining trocar (Figs. 2 and 3) was pushed into the sac where it protruded most into the vagina. The fluid discharged was of a dark yellowish color, and of a gelatinous character. The spring having been adjusted into

the canula, and the latter being drawn forward as far as possible, so as to bring the peritoneal lining of the cyst in close contact with that of the vagina, the patient was allowed to recover from the effects of chloroform. On examining the abdomen it was now found that the tumor on the left side had disappeared, while a small one on the right side still existed. The patient, on regaining consciousness, complained of very little pain, and soon fell into a doze. The reaction which followed the operation was very slight, and what little suffering there was could be easily subdued by small doses of opium. The long canula in this instance gave rise to very little inconvenience. The discharge was never very profuse, but slightly offensive. The cantula was removed four weeks after the operation, and the patient allowed to leave her bed soon afterwards. Two months after this the cure of this tumor could be considered complete.

The tumor of the right side, meanwhile, began to increase in size considerably, so that the abdomen had almost regained its former size. Distinct fluctuation could be perceived all over the extent of the tumor—distinct enough to make us believe that the fluid contained within the same was very thin. Through the vagina the tumor presented very favorably for performing the operation; and even here, at its lowest section, fluctuation could be made out, by holding the right index-finger in close apposition to it, and having an assistant perform percussion on the left hand held upon the abdominal surface of the tumor. On the 14th of January, 1864, the operation was performed in the same manner as on the first occasion; but when the trocar

had been withdrawn from the canula, only a few ounces of a serous liquid escaped, followed by a large mass having very much the consistence of sausage meat, and looking exactly like encephaloid. The canula was therefore withdrawn, the cancerous nature of the cyst being considered unadapted to the operation by draining.

This is not the first instance where I found that a cancer enclosed in an ovarian cyst had, upon physical examination, all the characteristics of a simple hydropic degeneration of the ovary.

CASE IX. Mrs. A——t, of 73 Norfolk street, 32 years old, by the advice of her attending physician, called at my office on the 27th of December, 1863, requesting to be examined with a view of deciding whether an operation could be performed on her. She had been married ten years, and given birth to one child. About three years after delivery, Mrs. A. began to suffer from irregularity in her menstrual function, from a sensation of fullness about the stomach, at times so intensified as to be actually painful, but at last she noticed that her abdomen had become enlarged enough to arouse the suspicion of a second pregnancy. Time, however, dispelled this idea, and when after a while a number of physicians had been consulted in Hanover, her native place, she became convinced of the fact that the cause of the abdominal swelling was cystic disease of the ovary. All manner of internal treatment having been tried, and at last rejected as ineffectual, she applied to a well-known gynecologist in her neighborhood, asking for an operation. But he refused to do so, considering the case as one beyond the reach of surgical art.

Mrs. A. left Europe and arrived in New York about January, 1862. She looked pale and emaciated—still a great deal of muscular strength and mental elasticity seemed to be left. On examining her abdomen, it was found irregularly enlarged to a considerable extent; it measured thirty-seven inches in a line running across the navel, fourteen inches from the xyphoid process to the right anterior iliac spine, and thirteen inches from this first point to the left anterior iliac spine. Two distinct tumors could be felt below the abdominal walls, the right one being the larger of the two, and reaching to some extent into the hypochondriac region of this side. Below and in the centre of these swellings a third tumor could be perceived, located about the symphysis pubis. Fluctuation was very distinct all over the abdomen. On examining through the vagina, the neck of the womb was found to be pushed forward and flattened against the symphysis pubis, the entire space between the vaginal portion and the os sacrum being filled up by a large, round, fluctuating tumor. On Wednesday, 27th of January, 1864, the operation was performed in the presence of Drs. Krackowizer, Schnetter, and Michaelis. The patient being placed across the bed in the position for lithotomy, the small self-retaining canula (Figs. 4, 5, 6, 7) was pushed close behind the neck into the cyst. Not a drop of blood was lost, and the retaining apparatus was adjusted without the least difficulty. About two pounds of pus were discharged from the canula. At 7 P.M. the pulse had risen to 110 in the minute; there was nausea and intense headache. Was



FIG. 4. Stilet of the trocar.



FIG. 5. Steel spring, sitting into the canula.



FIG. 6. Canula, 8 inches long, $\frac{1}{4}$ inch wide, with spring in situ.



FIG. 7. Handle to spring, which can be removed when canula is in situ.

ordered to take pieces of ice and one grain of the aqueous extract of opium every hour.

January 28th, 10 A.M. Has had a restless night; severe headache; pulse 120; abdomen painful on pressure on the left side; secretion not profuse, of a sero-purulent character; cloths dipped in ice-water to be applied to the head; opium pills to be taken at night.

January 29th. Has slept well; no pain; secretion commences to be offensive; opium at night.

January 30th. Is very feverish; pulse 125; discharge profuse.

January 31st. Fever considerably diminished; a vaginal examination discloses the fact that there exists a large deposit of inflammatory exudation within the tissue of, and above the vagina, surrounding the canula. Fever continues to abate; secretion abundant, but thick and of a good character. On February 7th, the patient is found sitting up and sewing. On the 9th, the infiltration around the wound in the vagina can no longer be perceived by the examining finger.

In the last week of February, a piece of gangrenous tissue, three inches long and two inches wide, was discharged through the canula.

An examination on the 24th of February revealed the fact that the lower edge of the left tumor could no longer be felt through the abdominal wall, while the upper one had sunk considerably below the navel. The canula, which had at first an almost vertical position, was now found to have altered its direction in such a manner that its long axis was in a line with the

lateral diameter of the pelvis, so much so that the portion located within the cyst was turned far to the right, and its upper end even deeper than that located within the vagina. This displacement of the canula was brought about by the descent of the second cyst. In order to get a precise knowledge of the condition of the punctured cyst, the canula was removed on the 26th of February. The withdrawing of the retaining apparatus was easily accomplished by the aid of a small speculum through which the handle was screwed to the spring within the canula. The opening in the vagina was perfectly circular, surrounded by thickened tissue, just large enough to admit the index-finger, around which it had a tendency to clench very much like the sphincter. The almost obliterated cavity of the cyst was of an oblong shape, extending backwards and towards the right side, just large enough to have the finger moved inside of it with ease. Through its upper wall the lower one of the left cyst could be touched. The discharge consisted of thick, benign pus. Mrs. A. was now permitted to go about without the canula, in order to allow the cyst to thoroughly contract and obliterate, and at the same time she was recommended to undergo a course of tonic treatment, as a preparation for the second tapping. This was attempted on the 13th of March. At that time the first opening had remained large enough to allow the operation to be performed through the same, but when the trocar had been pushed through the lower cyst for the purpose of tapping the upper one, it was found that no amount of force was sufficient to pass its point

into the cavity. There appeared to exist a thick, solid mass at the junction of the first with the second cyst, the resistance of which completely foiled the attempt at a second operation. We consequently had to desist, and to wait for the result of this half finished proceeding. In the course of the next few days the symptoms of subacute peritonitis began to develop, and notwithstanding everything was done to check the progress of this inflammation, the patient began to sink under it, and died on the 13th of April, 1864.

A post-mortem examination proved that the cyst first tapped had shrunk so as to form a tumor the size of an apple, the thickness of its walls, put together, exceeding the diameter of the cavity that was left. The inner coat consisted of newly organized layers of exudation, which had begun to unite and obliterate opposite parts of the walls. The cause of the failure of the second operation was explained by the fact, that the place where the trocar had touched the lower cyst was the seat of development of a texture about two inches in thickness, composed of hundreds of minute cysts. Inflammation and purulent infiltration of the connective tissue had spread in this section, and extended thence to the peritoneum at large. The cause of this result was probably not so much the direct effect of the operation itself, as the contact of the fresh wound with the secretion of the cyst through which the trocar had passed on its way to the tumor located above, which latter had not yet ceased to discharge purulent matter.

CASE X. Mrs. B——r, æt. 46, born in France, came to

this country about ten years ago a perfectly healthy woman, and soon found employment as forewoman in a large French millinery establishment of this city. In the year 1862, she first began to exhibit all the rational symptoms of pregnancy, accompanied with severe pain in the right iliac region, and a gradual increase in the size of her abdomen. With a view of having an explanation of all those symptoms, she applied to her attending physician, and was declared to be enceinte. She being a widow, could not agree with this opinion, consulted several other physicians of this city, and at last became convinced she was suffering from ovarian dropsy. The abdominal swelling gradually assumed such dimensions that she could no longer perform her usual duties. She therefore was advised to undergo the operation of tapping, which was done seven times up to 1866. When the abdomen had regained its former circumference, after the last tapping, she consulted several prominent specialists in this city, Dr. Atlee among the rest, asking for a radical operation. Each and all of them gave their advice not to have ovariectomy performed, but to be satisfied with the occasional removal of the fluid by the trocar. The opinion expressed by these several authorities pointed to the fact that there existed decided contra-indications against the performance of a radical proceeding, consisting partly in the peculiar relation of the cyst to the uterus, partly in the presence of extensive adhesions, and in the extreme tenderness of a great section of the abdomen. In this hopeless condition the patient at last called upon me, asking for advice, in

September, 1866. When I saw her first, she had the peculiar expression of a woman that had undergone a great deal of suffering; she was very pale, emaciated, and hardly able to walk, partly from severe pain in the right side of the abdomen, and partly in consequence of a slight paretic affection of the right limb, which was added to all her other ailments about four years ago.

On examining the abdomen, it was found to be considerably enlarged, but more in the right than in the left side, its greatest circumference measuring thirty-three inches. The outlines of a soft, fluctuating tumor could be easily traced, its upper limit extending to the right hypochondriac region. The entire abdomen, but more especially its right section, was tender on being even slightly touched. By vaginal examination the neck of the uterus was found to be pushed forward towards the symphysis pubis, and behind it a round, fleshy, and indistinctly fluctuating tumor presented, filling up Douglas' cul-de-sac. Under these circumstances the patient was not a fit subject for any kind of radical operation, and she was therefore recommended to undergo a preparatory treatment, which consisted in absolute rest, in continued application of ice-bags over the abdomen, in the use of nutritious food and tonic remedies. After the lapse of about six weeks, a marked change in her condition had taken place; the patient felt considerably stronger, the usually rapid pulse had diminished in frequency, and palpation of the abdomen could be done thoroughly without giving rise to any pain whatever.

The operation was performed on November 1st, 1866, with the assistance of Dr. Voss. Chloroform having been administered, the patient was placed in the position for lithotomy. After the posterior wall of the vagina had been retracted as much as possible by Wutzer's depressor, and the uterus pressed forward by a sound placed inside of it, the upper wall of the posterior section of the vagina was brought into full view, a tenaculum was inserted into the tissue about midway between the uterus and the sacrum, and an incision made running antero-posteriorly. This was gradually enlarged with a pair of scissors till the opening was about an inch in length. Through the latter the tumor described above could now be distinctly seen; it was of a shining red color, and studded with small blood-vessels. Into the walls of this the long trocar (Figs. 2 and 3) was introduced. After removing the blade, a thick, mucilaginous matter came away to the amount of several quarts. The cyst having thus been emptied out, it was pulled down by means of the spring being passed and fitted into the canula. The hook was now inserted into the cyst wall, the canula removed, and the double hook (Fig. 8) inserted. The opening in the cyst was then enlarged with the scissors to correspond with the size of the vaginal incision. After the former had been pushed back to a level with the latter, the edges of both wounds were kept in close apposition by the expansion of the double hook-forceps already in the cyst. Six silver sutures were passed through both the vaginal and the cystic edges of the wound.

The patient replaced in bed, slept for some time afterwards, and when she awoke, complained of some pain in the lower part of the abdomen, but otherwise felt pretty comfortable.

Towards evening the pulse began to rise up to 125, and the woman suffered considerably from pain of a bearing-down character. The abdomen, however, was soft; no vomiting. Ordered twenty drops of Magendie's solution, to be repeated every few hours until both fever and pain had subsided. Cold water dressings on the stomach.

Three doses of the solution of morphine had sufficed to induce some sleep, and when I saw Mrs. B. the next morning, she felt pretty comfortable, although the fever had not much abated. Abdomen, however, not tender on pressure; very little discharge.

The great nervous as well as vascular irritability of the patient made it necessary to remove all causes of fever in the shortest possible time, and I therefore commenced to make injections of a very strong solution of carbolic acid into the sac on the evening of the second day. These were now repeated

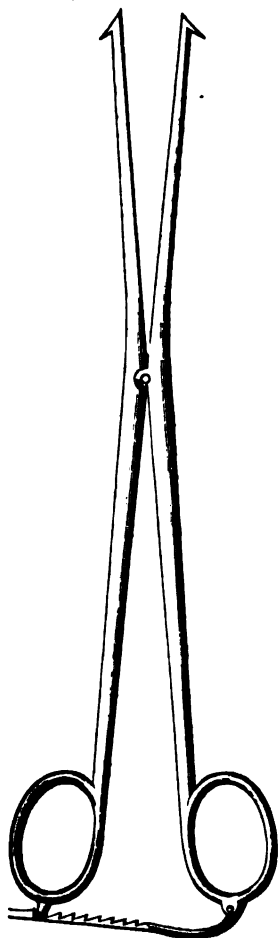


FIG. 8.

twice daily, and thus the increase of fever, which usually sets in about the fourth or fifth day, was averted. The discharge was at no time very profuse, but rather thick, and occasionally mixed with shreds of membranous exudations.

The opening being large enough to easily allow the introduction of the finger, the process of healing in this instance could be followed up step by step. The collapsing of the cyst, after it had first been emptied out, took place in an antero-posterior direction, the upper end of it being evidently kept in its place by adhesions. Gradually the walls of the sac began to be folded up and to converge towards the centre from all sides. These corrugations became larger and thicker, the interstices becoming smaller, until two opposite walls touched each other, began to agglutinate, and to be bridged over by bands of lymph.

The patient did so well, and the discharge was so trifling on the 8th of November, that one injection in the day sufficed.

From November 17th to 26th, the carbolic acid was used only every other day. After this the patient began to go about the room, and was discharged as cured, with regard to the cyst in question, on the 7th of December.

The second tumor, located above the one removed by operation and towards the right side, had not diminished in size, and I proposed to have this latter drained according to Le Dran's method, because it could neither be reached from the vagina nor removed by ovariectomy, on account of extensive adhesions.

Mrs. B. was now transferred to the German Dispensary, and the operation performed on Wednesday, the 30th of January, 1867, in presence of a number of physicians belonging to the staff of that institution. On attempting to open the abdominal cavity, it was found that the limit between the peritoneal covering of the cyst and that of the anterior wall of the abdomen could no longer be traced, owing to extensive, thick, organized exudations.

When the sac had been laid open by an incision of about three inches in length, a very thick, grayish, ropy liquid came away, measuring about four quarts. On examining the cavity of the cyst a tumor was found protruding into the same, of the size of a large fist, which had its attachment on the anterior wall, just below and towards the right from the navel. The several gentlemen who examined it, Dr. Krackowizer and Dr. Voss among the rest, declared it to be a colloid cancer, and consequently the prognosis of the case was very unfavorable. The application of sutures to keep the two parts of the peritoneum in contact was only needed near the lower angle of the wound, all the rest of it being already adherent, as stated above. The patient was again very feverish during the first few days after the operation, and symptoms of peritonitis began to develop themselves. The use of morphia and applications of ice-water over the abdomen gradually reduced the fever and tenderness. Meanwhile the wound was dressed with cotton-batting soaked in a solution of carbolic acid. On the third day after the operation the sac was thoroughly washed

out with warm water, and a solution of carbolic acid (gr. 30 in $\frac{3}{4}$ 1) injected twice daily. The secretion, which had been thick and slimy during the first days, gradually assumed the character of pus, and was mixed with large flakes of lymph. To accomplish an uninterrupted flow of the secretions, a number of small india-rubber tubes, perforated with numerous holes, were kept in the sac.

On the 8th of February, on making a digital examination of the inner surface, I found that the tumor described above had shrunk to about half its size, and instead of being soft and bleeding on the slightest touch, it was now a solid mass which could be handled freely without giving rise to any hemorrhage. During the next few weeks the discharge was very profuse but benign, and the sac shrank to such a degree that the drainage tubes could no longer be kept inside of it, and it became very difficult to keep the wound from being obliterated by luxuriant granulations. As far as could be judged by external palpation, the tumor decreased steadily in size, and at the same time becoming harder.

The patient henceforth began to regain her former strength to such a degree, that she was allowed to sit up and walk about five weeks after the operation. The opening in the cyst was forcibly kept free by making repeated injections into the sac. About three weeks later the patient left the hospital to resume her former duties. The wound closed up entirely, but had to be reopened in July, by a small puncture, to give exit to a few ounces of secretion which had reaccumu-

lated. But it closed at last for good, and the patient was considered cured.

I saw Mrs. B. for the last time on the 23d of December, 1868. She was healthy-looking, and stouter than she had been for many years past. There existed a hard cicatrix, about an inch and a half in length, midway between the umbilicus and the symphysis pubis. There was a tympanitic sound all over the abdomen, with the exception of a point located between the navel and the right anterior iliac spine, which was dull on percussion, to the extent of about three inches square. The remnants of the old cancerous tumor could be felt in this location, conveying the impression that nothing was left but some hard cicatricial tissue. On examining through the vagina, it was found that the neck of the womb had almost reassumed its normal position, a small, soft, fleshy mass filling up Douglas's cul-de-sac—the remains of the obliterated cyst. The cicatrix from the first operation could be felt distinctly behind the vaginal portion.

CASE XI. Mrs. Helen G——t, 35 years old, born in France, married nine years, has never been pregnant. Having lost her husband many years ago, she was compelled to do work on a sewing-machine for a tailor, who occupied, with his entire family, a small room in a tenement-house, located in one of the most populated and least cleanly quarters of this city. In consequence, her general health began to fail; she became pale and emaciated. The menses appeared pretty regularly, but were accompanied and followed by severe backache and a profuse leucorrhœa. The abdomen began to

enlarge about two years since, after an exposure to a current of air, after she had overheated herself during one of her menstrual periods. At the same time she was attacked with pleuritis, and her menses, hitherto very regular, appeared two weeks after the normal period. During the first year the abdomen increased gradually until it reached the state in which I saw it when the patient first presented herself. This was on the 21st of October, 1867.

On examining the abdomen, I found it considerably larger than we expect to find it at the full term of gestation. On percussion, it gave a dull sound up to the epigastric region, which extended on the left side above the lower edge of the ribs, while in the axillary line of the right side a tympanitic sound could be perceived, which extended backwards and downwards all through the lumbar region. Fluctuation was very distinct all over the abdomen. No signs were present to point to the existence of adhesions.

On examining per vaginam, the cervix was found to occupy its usual position, being only to a slight extent pushed forward towards the symphysis pubis. In consequence, the posterior cul-de-sac of the vagina appeared to be larger than usual, and on pushing the finger into it, as high up as possible, a small segment of a tumor could be felt, and distinctly so, when the abdomen was pressed downwards by the left hand.

A monocystic tumor of the left ovary was diagnosed, in a patient of a very anæmic constitution, and a very nervous and irritable temperament.

The operation was performed in the hospital con-

nected with the German Dispensary, on the 16th day of November, 1867, in the presence of Drs. Kammerer, Althof, Muller, etc.

The mode of operating was exactly the same as that adopted in the case of Mme. B——r. When the vagina had been cut through, the white, shining envelope of the cyst appeared about three inches above the incision. It was tapped with the large trocar and pulled down to near the os externum, the puncture enlarged, and then attached to the vaginal wound by six metallic sutures. The wound was large enough to admit of the easy passage of two fingers into the sac. The liquid evacuated more than filled a large pail, and a great portion of it could not be gathered, but flowed along the mattress on the operating table, and the floor of the room. It was straw-colored, limpid, but decidedly albuminous. When the sac came into view outside the vulva, being collapsed, it had a decidedly bluish hue, from the large number of blood-vessels dispersed throughout its tissue. Its inner surface was not smooth, but studded with very minute villous growths, which were highly vascular.

No hemorrhage worth mentioning occurred during the operation, and when the patient had thoroughly recovered from the effects of chloroform, she expressed a sensation of bienaise which she had not experienced for many years back.

November 16th, evening. Feels easy; very little pain; pulse 84.

Nov. 17th, A.M. Has slept some during the night; pulse 90.

10 P.M. Pulse 108; injection of solution of carbolic acid (30 gr. in $\frac{3}{4}$ 1); no pain whatever.

Nov. 18th. Has passed a comfortable night; pulse 88. The contents of the sac are not quite freely discharged; it is necessary to exert pretty firm pressure above the symphysis to empty it out thoroughly. This is probably owing to two causes. During the operation, after the sac had been evacuated and pulled downward, I became convinced of the existence of adhesions in its upper and anterior aspect; and further, on examining to-day with the finger the cavity of the cyst, I found that the many protruding folds of the now collapsed walls, touching each other from opposite sides, began to obstruct the free passage of the secretion. The latter has a sero-mucous aspect. Injection.

9 P.M. Pulse 104; very little odor as yet.

Nov. 19. Secretion profuse, purulent, and begins to be very offensive. Pulse 104. Injection.

9 P.M. Pulse 110. Secretion same character. Injection.

Nov. 20. Patient has had a restless night, disturbed by feverish excitement and profuse perspiration. Pulse 120. Secretion abundant, thin, very fetid. Injection of a strong solution of the acid.

2 P.M. Pulse 130. Another very concentrated injection.

10 P.M. Feels easier. Pulse 110. Discharge less profuse. Injection.

Nov. 21. Pulse 108. Better night. Secretion diminished, and seems to be discharged more freely. But since the cyst cannot collapse perfectly, on account of

adhesions, the air, which is unavoidably carried into the vagina during examinations and injections, accumulates in the upper part of the now longitudinal sac, and has to be squeezed out each time by applying a considerable amount of pressure on the abdomen, shortly before and while withdrawing the syringe from the cyst.

9 P.M. Pulse 100. Injection.

Nov. 22. Pulse 108. Injection.

9 P.M. Pulse 96. Although there is apparently very little cause of irritation from the condition of the cyst, and consequently very slight feverish reaction, the patient feels weak and restless. No appetite. Altogether, she is one of those irritable, frail constitutions which have absolutely no resources to resist a shock; which collapse as soon as the system is brought under conditions varying only slightly from its ordinary physiological compass.

Nov. 23. Wires uniting the edges of the cyst with the vagina removed to-day. There exists quite a thick wall of solid lymph deposited in the pelvic cavity encircling the wound, which keeps the latter sufficiently open to allow of the removal of these sutures. Pulse 110. Injection.

P.M. Pulse 108. Another injection.

Nov. 24. Pulse remained at 108 throughout the day. The amount of secretion is lessening in a marked degree; the cyst begins to shrink, and the water injected returns immediately. The use of carbolic acid cannot yet be dispensed with, because the odor of the discharge is as yet offensive.

Nov. 26. Pulse always 108. The secretion becomes

thicker, and looks more like healthy pus. Only one injection daily.

Nov. 27. Menses appeared at the expected time. Pulse rises to 110.

Nov. 28. Menses quite profuse.

Nov. 29. Pulse came down to 104; secretion of quite a thick pus. Leaves her bed to-day to sit up for a few hours.

Nov. 30. Feels very well; appetite returned. Pulse 96.

From this time onward Mrs. G. gradually recovered her strength, and she was discharged cured by the middle of December.

INDICATIONS AND CONTRA-INDICATIONS.

Not all cases of ovarian cysts are in a proper condition to be treated by the operation *per vaginam*. Kiwisch says of his method, that it is generally applicable to moderately large simple cysts, which do not exceed the size of a large pregnant uterus, and can be reached from the vagina. Smaller cysts are obviously still more suitable to it, as soon as they can be recognized. And still further he asserts that the operation is only practicable in those cases where the cyst can be distinctly felt through the vagina; that it is particularly difficult when the vagina is narrow, and must then be performed with very great care. If Kiwisch did not attempt to attack cysts of very large size, he was probably afraid, not so much of the immediate effects of the operation itself, as of the evil consequences of a protracted suppuration, and its drain on the system. With

the improved methods of regulating and altering the amount and quality of the secretion of the cyst after the operation, we do not think that the size of the cyst can form a proper contra-indication against this method. Extensive adhesions have been present in some of our cases, and although they have retarded the collapsing of the cyst, and sometimes the free evacuation of the secretion, they are no absolute hindrance in performing the tapping per vaginam. It is probable that they undergo a process of atrophy when their principal source of nutrition has been destroyed in its vitality. Those kinds of adhesions which exclude the safe performance of other operations for the radical treatment of ovarian dropsy—namely, those connecting the cyst with the lower part of the pelvis and the vagina—are very favorable for the operation in question. The condition of the cyst-walls must be taken into account when we decide about the choice of a method of operating: if we admit that a cyst with thin walls will collapse more readily, and be more easily altered in its functions, it may, on the other hand, prove a source of danger by the fact that the inflammation at first kindled up in the inner lining membrane is apt to spread over its peritoneal surface, and thus give rise to symptoms of peritoneal inflammation. In a great many cases where the operation has been performed, unmistakable evidences of an inflammatory process on the peritoneal surface of the cyst have been observed, which, when controlled, and restricted to the peritoneum within the vicinity of the cyst, must be looked upon as a very favorable coincidence, inasmuch as the exudation is apt to aid

the process of healing. The lymph deposited, if not reabsorbed, will become organized and form a cicatricial tissue, which, by its firmness, prevents a re-expansion of the cyst-wall. Thus a considerable thickness of the walls, although it renders the operation safer, as regards the life of the patient, will protract the process of healing. The density may, however, reach such a degree that it renders the performance of the operation in the ordinary manner not only very difficult, but occasionally impossible, as it occurred in the case of Mrs. A——t. However, since I have given up operating with the trocar, I think that no cyst-wall could be thick and hard enough to oppose any attempt at perforating, if we use the knife and dissect the single layers step by step.

As regards the contents of the cyst, those containing consolidated fat, hair, or encephaloid matter must be excluded from the operation, unless their contents be liquefied by some previous process of inflammation and disintegration. Colloid cysts, even if their contents be not thoroughly fluid, can be treated in this manner, as is demonstrated by Dr. Schnetter's first case. In this instance, after the operation a very rapid liquefaction of the colloid matter took place.

Compound, secondary, and tertiary cysts, and cysts in both ovaries, have been excluded by the first operators, but can no longer be considered a contra-indication against the successful performance of this operation, since Dr. Schnetter has first of all applied the operation successfully in cases of compound cysts. It is possible, under these circumstances, either to tap the second cyst

after the first one has been evacuated, and through the same puncture, in one session, or to attack the second cyst after the cure of the first has been completed. (Case of Mrs. B——g and Dr. Schnetter's case.) Everything depends on the relative position of the several cysts to each other. If one be developed on the side of the other, each may be tapped separately on successive occasions; if one be located above the other, the lower one might be punctured, the contents evacuated, and the upper one tapped at once. This latter proceeding might, however, involve some danger in case the second puncture should not happen to touch the upper cyst at a point where it starts from or is connected with the lower cyst by adhesions. Should the trocar touch the second cyst at a point where it is only in close apposition to the first cyst, it would twice perforate the peritoneum, and the opening in the lower cyst would be dislodged from the upper one after it had collapsed; decomposed fluid or gases would escape either from the upper or the lower cyst into the abdominal cavity, and give rise to the most dangerous form of peritonitis. The accident just described, namely, the passage of ichor or foul air into the abdomen, is the cause that the operation, when performed after the method of Récamier, and of late by Dr. Sims, must necessarily prove fatal. Both operated in the following manner: A curved trocar, about two feet in length, was passed into the cyst through the abdominal walls, and directed towards Douglas's cul-de-sac; a second trocar was pushed into the cyst through the vagina, so as to meet the former instrument, which is then withdrawn. Thus

two openings are established in the sac, the lower one giving issue to the contents into the vagina, the upper one into the abdominal cavity, causing the accident leading to inevitable death of the patient.

It is therefore better, under all circumstances, to puncture only one cyst at a time; to allow the first one to be drained thoroughly and to contract sufficiently; to wait for the upper one to descend into the vagina, and thus to come within reach of the instruments. In case a second operation appears to be inevitable, it would probably be better to establish the opening in the vagina and the cyst in either the right or left side of the pelvis, as near as possible to the iliac bone, in order to retain a sufficient space on the other side for the performance of the second operation. The time for the second operation is, however, not always optional, since it occurs that the process of decomposition of the contents of the first cyst extends to the second by the separating septum, causing septicæmia, when a second operation is demanded in the shortest possible time, to divert the danger of hectic fever. In Dr. Schnetter's first case a second cyst spontaneously evacuated its contents by suppuration into the first one. It is probable that, by the collapse and destruction of the principal cyst, an obliteration of the vessels feeding the smaller cysts takes place, in consequence of which they either disappear by atrophy or cease to grow.

The relative position of the cyst to the uterus and the neighboring organs is of the greatest importance. The operation can only be performed in those cases where the cyst is distinctly felt through the vagina behind

the neck of the uterus. This was considered necessary in all cases where the operation of tapping per vaginam was to be performed. I have, however, succeeded in executing this method in a case (V—t), where the womb was turned backward and the cyst located in front of it. The uterus, in this instance, was placed forward by the sound, and the cyst pressed downward into Douglas's cul-de-sac. Under similar conditions, where it should be found impossible to accomplish this manœuvre, I would propose to tap the cyst through the abdominal wall, and try to bring it in proper position for the performance of the operation before it had been filled up to its full size.

With regard to the constitution of the patient, experience has taught, that women reduced to a very low degree of health and strength, may be safely subjected to this method of operating, because our better means of performing the operation, and the improved method of after-treatment, do no longer exclude any constitution, no matter how much impaired by previous disease.

AFTER-TREATMENT.

The treatment after the operation has to direct its attention to two points: first, to the reaction following the opening of the peritoneum; and second, the accidents arising from the altered secretions and the inflammation of the cyst. With regard to the symptoms of the first order, it may be said that they never require any very active treatment, except where the operation has been performed in highly irritable and exhausted patients.

But even under such circumstances the local application of ice and the use of morphia is always sufficient to rapidly subdue reactive fever and threatening peritonitis. Under ordinary conditions, the reaction on the general system is but slight during the first few days, and it is not until the fourth or fifth day that severe symptoms set in. This second stage of reaction comprises different sources of danger, which must be well understood in order to be properly attended to. They may either be owing to inflammation of the cyst and its peritoneal lining, or to absorption of decomposed matter. In the former instance, the ordinary rules for the treatment of inflammation of serous membranes hold good. A certain degree of inflammation of the cyst and its surrounding tissues, especially of its lower aspect, is always observed, and necessary to bring about adhesion between the peritoneal surface of the cyst and that of the vagina. It is further necessary to destroy the vessels contained within its walls. Wherever the operation is performed according to the method usually employed, namely, by keeping a catheter or canula inside the cyst, inflammatory action is more apt to occur, from the fact that that part of the cyst-wall, opposite to the puncture, is occasionally brought in contact with the upper edge of the canula, by which it is unduly irritated—a fact which I have observed in one or two instances, and where I removed pain and other signs of inflammation by altering the position of the instrument. The septic fever must be avoided by procuring the most complete evacuation of the contents of the cyst, and by altering the character of the secretion. Both indications are complied with by the use

of cleansing and disinfecting injections. The frequency of these injections, as well as the strength of the disinfecting solution, must be proportionate to the amount and character of the discharge. To avoid unnecessary repetition of details, I refer my readers to the case of Mrs. G——t. One great advantage of my improved method of performing the operation is, the avoidance of a canula, by which manner a more perfect drainage of the sanious matter can be accomplished.

The last operation has been performed in the State of New York, by DR. HIRAM CORLISS, of Greenwich, Washington County, N. Y. It is published in the *N. Y. Medical Record*, Vol. III., No. 69. Mrs. M., of Saratoga, aged 53, first felt in 1863 a disagreeable sensation in her right inguinal region. It continued in that place for about one year. She next discovered a small tumor of the size of a nutmeg in the affected region, and this continued, but very slowly, to increase. In the course of the three years following, the tumor increased sufficiently to occupy nearly the whole abdominal cavity. During the whole of this time she experienced no pain in the swelling. Her catamenia were regular until October, 1868. I was called to consult in her case with Dr. Preston, the family physician, on the 16th of December, 1867. Another visit was appointed on the 20th, but her suffering was so great, they sent for me the next day, the messenger saying she could live but a little time without relief. On the 18th I visited her again with Dr. Preston. At this visit I tapped the swelling through the vagina with a

long curved trocar, and drew off five quarts of a dark-brown liquid.

After only a few moments she became perfectly comfortable. I then told her that it would probably fill again within a few weeks. On the 9th of January, 1868, I was sent for again; I tapped her the second time, drawing off four quarts. The contents of the cyst were less dark, but extremely fetid.

The patient from the last tapping commenced to improve in her general health, which had previously become very much impaired. After the second tapping I introduced a good-sized silver canula, to allow a persistent and free drainage. For a number of weeks we continued to inject frequently a weak alkaline solution through this tube.

The opening into the sac, in this way of operating, being in the most dependent portion of the tumor, allows the freest exit for all its fluid contents, and the method, for this reason, gives to the operation a decided advantage over all others.

The discharges for a few days were very fetid, but soon became less so. The canula accidentally came out after being in eight weeks, but the discharge continued five weeks without it, and then entirely ceased for one week, when about a gill was discharged. The discharge at this time continued for about three hours and then ceased entirely, and there has been no filling or bloating since. I saw her on the 22d of September. She said she was as well as she had been for years.

TABLE OF CASES

IN WHICH OVARIAN CYSTS WERE PUNCTURED THROUGH THE VAGINA, TO EFFECT A RADICAL CURE.

No.	Age.	Mode of Operating.	Result.	Remarks.	Authority.
1	40	Large trocar, canula left inside the cyst.	Died 4 days after the operation.	Simple serous cyst.	J. F. Henckel, <i>Med.-Chirurg. Anmerkungen, 7te Serie, Berlin</i> . 1760. 4. P. 26.
2	28	Simple incision.	Cured.	Récamier, <i>Dict. Méd.</i> , t. 5.
3	—	Simple incision.	Died on 30th day.	Dubois, <i>Revue Médicale</i> , 1838.
4	26	Passed a long curved trocar into abdominal wall, and downward through the cyst into the vagina.	Died on the 20th day.	Peritonitis and lung complication.	Récamier, <i>Revue Médicale</i> , Jun. 1830.
5	—	Puncture with a pharyngotome.	Cured.	Cure complete on the 39th day.	Récamier, <i>Revue Médicale</i> , 1840.
6	—	Puncture with trocar.	Return of disease.	Canula was not retained in the wound after puncture.	Nonat, <i>L'Experience</i> , 1840.
7	35	Puncture with trocar.	Death in 6 hours after last operation.	In attempting a second operation the trocar entered the peritoneum.	Tavignot, <i>L'Experience</i> , 1840.
8	—	—	Cured.	Discharge continued 64 days.	Arnot, <i>Archives Générales</i> . Vol. 65, p. 487.
9	29	Puncture with trocar; large-sized canula left inside.	Cured.	Ten quarts of a greenish liquid were discharged.	K. Schwabe, <i>Hufeland's Jour. für prakt. Heilk.</i> , Dec. 1841. P. 81.

No.	Age.	Mode of Operating.	Result.	Remarks.	Authority.
10	30	Puncture with trocar, enlarged by incision.	Cured.	Nine pounds of a chocolate-colored liquid discharged; canula kept inside for seven weeks.	Kiwisch. <i>Prager Vierteljahrsschrift</i> , B. X. P. 87. 1846.
11	19	Puncture with trocar, enlarged by incision.	Died 2 months after the operation from peritonitis. Patient had been suffering from attacks of acute peritonitis before the operation.	Cyst of the size of a child's head, contained two pounds of a limpid albuminous liquid.	Kiwisch. <i>Ibid.</i> P. 92.
12-27	—	Puncture, with incision.	10 cases were cured; in 2, the cysts filled up again; 1 died from typhoid, 3 months after the operation; 3 left before the cure was completed.	Detailed accounts of the single cases never published.	Scanzoni's cases. Reported by O. v. Franque. <i>Wiener Med. Halle</i> , 1864, No. 10-12.
28-30	—	Puncture with thick curved trocar. Elastic catheter No. 12 introduced through canula and kept in the wound.	2 cured; 1 died.	The operations were followed by severe cystic inflammation, threatening the life of the patients.	Charles West. <i>Lectures on the Diseases of Women</i> . Ed. II. London, 1868. P. 569.
31-33	—	Puncture with trocar; canula left inside.	2 died; 1 cured.	Credé. <i>Fock über die operative Behandlung der Ovarien Cysten, etc.</i> <i>Monatsschrift f. Geburtsh.</i> , B. VII. H. 5, 1866. P. 332.
34	—	Puncture with large trocar; canula left 3 weeks.	Died three days after second puncture, from septicæmia.	Filled up again and was punctured a second time.	B. Langenbeck. <i>Ibid.</i>
35	28	Puncture with large trocar; canula left inside.	Died 6 weeks after operation, from septicæmia.	Twenty pounds of a greenish albuminous liquid were discharged.	B. Langenbeck. <i>Ibid.</i>

No.	Age.	Mode of Operating.	Result.	Remarks.	Authority.
36	32	Simple puncture with trocar.	Cured.	Discharge continued several days.	Ogden. <i>London Med. Gazette</i> , Vol. 26, p. 349.
37	25	Puncture, with large incision; four successive operations.	Cured.	Both ovaries were tapped in succession. The first tumor contained pus; the others a sero-sanguinolent matter.	Schnetter. <i>Verhandlungen d. Phys.-Med. Ges. in Würzburg</i> , B. V. H. 1, 1864. <i>Amer. Jour. of Obstetrics</i> , Vol. II., No. 1.
38	29	Puncture, with large incision, and use of large tube.	Cured.	Discharge continued about 5 weeks; tumor of the size of a womb in the seventh month of pregnancy.	Menninger. <i>N. Y. Jour. of Medicine</i> , Vol. XIII., N. S., p. 76, 1864. <i>Amer. Jour. of Obstetrics</i> , Vol. II., No. 1.
39	22	Puncture, with large incision.	Cured.	Severe hemorrhage; discharge continued several months; second almost solid tumor tapped 2 months after the first operation.	Schnetter. <i>Amer. Jour. of Obstetrics</i> , Vol. II., No. 1.
40	—	Puncture, with incision.	Cured.	Cyst contained blood; canula kept inside only a very short while.	Schnetter. <i>Amer. Jour. of Obstetrics</i> , Vol. II., No. 1.
41	—	Puncture, with incision.	Cured.	Colloid cyst.	Schnetter. <i>Amer. Jour. of Obstetrics</i> , Vol. II., No. 1.
42	36	Puncture with long self-retaining trocar. No incision.	Cured.	Multilocular cyst: one containing a bloody serum, the other a very clear watery liquid.	Noeggerath. <i>Amer. Jour. of Obstetrics</i> , Vol. II., No. 1.

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43	44	Puncture with long self-retaining trocar.	Cured.	Multilocular cyst; first cyst cured; second cyst contained encephaloid; operation abandoned. Died from peritonitis.	Noeggerath. <i>Amer. Jour. of Obstetrics</i> , Vol. II., No. 1.
44	32	Two operations: first, with Schnetter's instruments; second, with pointed hysterotome.	First cyst cured; died from hemorrhage after the second operation.	Large multilocular colloid cyst.	Noeggerath. <i>Amer. Jour. of Obstetrics</i> , Vol. II., No. 1.
45	32	One operation with the short self-retaining trocar. A second operation attempted in the same manner.	First operation successful; died after the second attempt, from peritonitis.	Multilocular cyst. On attempting the second operation, the trocar could not be made to perforate into the cyst.	Noeggerath. <i>Amer. Jour. of Obstetrics</i> , Vol. II., No. 1.
46	46	Operation performed without trocar; incision in vagina to cyst; no canula left; injections with carbolic acid.	Cured.	Multilocular cyst. The second cyst was successfully treated by incision of the sac from the abdominal wall.	Noeggerath. <i>Amer. Jour. of Obstetrics</i> , Vol. II., No. 1.
47	35	Incision in vagina and cyst; no canula; injections with carbolic acid.	Cured.	Large unilocular cyst.	Noeggerath. <i>Amer. Jour. of Obstetrics</i> , Vol. II., No. 1.
48	53	Puncture with trocar; canula left 8 weeks.	Cured.	Tumor occupied nearly the whole abdominal cavity. 4 quarts of a dark brown liquid discharged.	H. Corliss. <i>The N. Y. Med. Record</i> , Vol. III., No. 69, p. 484.

In summing up the result of operations performed in these 48 cases, we arrive at the following conclusions :

Of the 55 operations performed, 34 were successful; the disease returned in 3; result left undecided in 4; death occurred in 14 cases, or 25 $\frac{1}{11}$ per cent. Among the latter, 5 may be considered as the direct and immediate effect of the operation, viz. : 1 in consequence of hemorrhage, 4 from peritonitis.

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CONGENITAL SARCOMA OF THE TONGUE.

BY A. JACOBI, M.D., Prof., etc.

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47	35	Incision in vagina and cyst; no canula; injections with carboic acid.	Cured.	Large unilocular cyst.	Noeggerath. <i>Amer. Jour. of Obstetrics</i> , Vol. II., No. 1.
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THOMAS KENNEDY, 729 Second Avenue, was born on the 4th of January, 1869. He is of Irish parentage ; his

two openings are established in the sac, the lower one giving issue to the contents into the vagina, the upper one into the abdominal cavity, causing the accident leading to inevitable death of the patient.

It is therefore better, under all circumstances, to puncture only one cyst at a time; to allow the first one to be drained thoroughly and to contract sufficiently; to wait for the upper one to descend into the vagina, and thus to come within reach of the instruments. In case a second operation appears to be inevitable, it would probably be better to establish the opening in the vagina and the cyst in either the right or left side of the pelvis, as near as possible to the iliac bone, in order to retain a sufficient space on the other side for the performance of the second operation. The time for the second operation is, however, not always optional, since it occurs that the process of decomposition of the contents of the first cyst extends to the second by the separating septum, causing septicæmia, when a second operation is demanded in the shortest possible time, to divert the danger of hectic fever. In Dr. Schnetter's first case a second cyst spontaneously evacuated its contents by suppuration into the first one. It is probable that, by the collapse and destruction of the principal cyst, an obliteration of the vessels feeding the smaller cysts takes place, in consequence of which they either disappear by atrophy or cease to grow.

The relative position of the cyst to the uterus and the neighboring organs is of the greatest importance. The operation can only be performed in those cases where the cyst is distinctly felt through the vagina behind

the neck of the uterus. This was considered necessary in all cases where the operation of tapping per vaginam was to be performed. I have, however, succeeded in executing this method in a case (V—t), where the womb was turned backward and the cyst located in front of it. The uterus, in this instance, was placed forward by the sound, and the cyst pressed downward into Douglas's cul-de-sac. Under similar conditions, where it should be found impossible to accomplish this manœuvre, I would propose to tap the cyst through the abdominal wall, and try to bring it in proper position for the performance of the operation before it had been filled up to its full size.

With regard to the constitution of the patient, experience has taught, that women reduced to a very low degree of health and strength, may be safely subjected to this method of operating, because our better means of performing the operation, and the improved method of after-treatment, do no longer exclude any constitution, no matter how much impaired by previous disease.

AFTER-TREATMENT.

The treatment after the operation has to direct its attention to two points: first, to the reaction following the opening of the peritoneum; and second, the accidents arising from the altered secretions and the inflammation of the cyst. With regard to the symptoms of the first order, it may be said that they never require any very active treatment, except where the operation has been performed in highly irritable and exhausted patients.

but 25 grammes to 180–193 of the adult, or 6–7 per cent. of the whole brain. The hemispheres weigh 300 grammes, being 93 or 94 per cent. of the weight of the whole brain, and one-fourth or one-fifth of the weight of the adult hemispheres.*

These facts and figures are proofs and illustrations of several conclusions. There is nothing characteristic, nothing decisive in the skull or brain of the new-born. Everything is round, curved, smooth, loose, soft, indistinct. Little intellect, because little gray substance, and but few and flat convolutions. Little motory power, because of the smallness of the cerebellum. No distinct mark between the white and gray substances, therefore the irregular action of, and no just balance between, the conducting wires and the telegraphic directing centre, and therefore a disposition to abnormal action, viz., convulsions. Small and soft hemispheres, or rather gray substance; and therefore not only little intellect, but frequent and rapid loss of consciousness.

At the same time the size and weight of the nerves spreading through the body from the centres are considerable, the spine in about the same condition as the brain, with little distinction between the gray and white tissues, with the same looseness and softness and humidity, and the same tendency to abnormal action.

The proportions of the single parts of the brain undergo speedy changes. Its growth is intense. The cavity of the skull in the new-born, measuring one-third that of the adult, 482 cubic c. m., is twice as large

* E. Huschke: *Skull, Brain, and Mind of Man and Animal, according to Age and Race*. Jena, 1854, fol.

(999) in the second year as originally; but its growth is not uniform. The posterior occipital cavity, measuring 5 per cent. of the whole cranial cavity in the new-born, is 5.5 in the second year; the lateral middle portion diminishes by 1.10 p. c., and the anterior grows from 13.89 to 14.4 p. c. within the same period. *No part of the brain grows faster than the cerebellum*, it being in the new-born 6-7 p. c. of the whole weight of the brain, while the weight of the adult cerebellum is 12-14 p. c. Its growth is so rapid that the 6 or 7 p. c. grow so fast as to become 9 or 11 within two months; while with 10 or 15 years it yields only 12 and 13, and in the adult only 12 or 14. At the same time the whole brain is growing, but mostly posteriorly; thus the formerly horizontal and round posterior portion is flatter and more perpendicular; and the face grows considerably, particularly in its posterior portion.

Thus this period, the second year, is characterized by an inconsiderable diminution of the middle portion, and an equally small increase in size of the anterior portion of the brain, and further by a rapid increase of the cerebellum in size. The physiological action of the organ goes hand in hand with its progressing development, as every nerve function depends on nerve substance or nerve growth. Thus we understand why children can afford to be always in motion; to constantly exercise their muscles; to keep talking, laughing, crying, smiling, kicking, jumping, and fighting, all day; and to commence the same hard work again, after a sound sleep, with so little apparent tear and wear, for weeks and months and years (until the preponderance

of the anterior portion of the brain, the large hemispheres, is established), as to put in the shade all the muscular feats of all the John Heenans.

This preponderance of the large hemispheres, particularly of their anterior lobes, is established, or rather commenced, at a later period. After the fifth or tenth year, the base of the skull grows more in an anterior direction. With the enlargement of the anterior part of the cranium and brain, while the parietal bones have nearly completed their development, the frontal bone is drawn forward in its lower part, while its upper is yet growing. Thus, while the posterior portion of the skull has become more perpendicular, the frontal portion, although appearing flatter, gives the anterior lobes of the hemispheres more room to develop themselves to the full capacity of the cranial cavity. Thus, while under usual circumstances the brain shapes the skull, the skull shapes and forms the brain. This, then, is the period when the middle portion of the brain is developing but slowly, the cerebellum has ceased its rapid development, and the really super-brutal, human, thinking portion of the brain commences to develop in long strides, viz., between the 5th and 10th years of life.

Thus this is the time when playing and fighting may still be the order of hours, but no longer of the day, as the cerebellum is still under the influence of its hitherto rapid development. At this period the median portion of the brain, and the white substance generally, although not receiving a large addition to its weight, is still predominant. At this time a child must be taught: at this time the receptive, remembering

white substance of the large hemispheres has just been completed, is in full readiness for its functions, and is indeed the most active and reliable portion of the brain. This is the period of learning by heart, as memory is the principal quality of the brain, resp. mind. But nothing would be more injudicious than to exercise the white substance of the brain only. For the gray substance of the brain is being developed very fast, and in that period in which it is most pliable, most easily influenced, and amenable to culture. The time of a tree's growing is the time to shape it; the period of an organ's development is the best period for its training. A young lingual muscle will be practised into the intricate contortions of a foreign language; no adult will overcome them. And a young brain will be educated and trained into many functions, through its rapid anatomical changes and just forming structure, that an already fully-moulded organ will refuse to perform. The boy is not yet a philosopher, is not particularly adapted to reflection and thinking; but what little reflection exists, and whatever ideas rest undeveloped, because his gray cerebral substance has not been stirred into development by external influences, must be worked upon and exercised. Nothing, therefore, is more injudicious than to feed the memory of school-children exclusively; nothing more injurious than the mechanical learning by heart; no school-books less adapted to mental development than those question and answer apparatuses, catechisms, etc., so uniformly and pertinaciously used in our schools. Judgment and reflection are just ready to be developed by nature; we have

simply to follow nature in her exertions, and fall into line for the same aim. Nature gave us contractile muscles adapted for every effort and exertion ; if we neglect them they will become weak, and thin, and paralyzed. Nature is just raising gray substance in the cranial cavity of your boy ; unless you induce, as you would in a muscle, a lively and vigorous circulation, and increase the physiological change of substance in it, he will grow thin, and emaciate, and paralytic.

(To be continued.)

ON SOME IMPORTANT CAUSES OF CONSTIPATION IN INFANTS.

BY PROF. A. JACOBI, M.D.

CONSTIPATION is by no means a rare affection in very young infants. However, as in old age also, it has so frequently been taken as an almost physiological occurrence of but little importance, that its prognostical meaning and its pathological nature have often been under-estimated. It is true that many cases are attended with but little danger, but no less true, also, that the simple statement of an infant's bowels being costive ought not to be considered as a valid diagnosis of the causes which give rise to such a condition.

The causes of costiveness in early infantile age do not differ, in many cases, from those prevalent in adults. They may be classed under a few heads, according to whether they are referable to the contents

of the intestines, or their motory power and secretions, or local obstructions, or deficient innervation. Many of the serious diseases of adult age complicated with constipation are not often met with in infants, nor are the most dangerous forms of ailments of the nervous system—for instance, acute hydrocephalus—frequent occurrences in the very tender age to which our attention is here directed. Still, there are a great many hygienic, pathological, and anatomical influences which will have the result of rendering the alvine evacuations dry, scanty, or rare. It is the more important ones of these we mean to discuss, leaving out the symptomatology and therapeutics of the generality of cases as described in almost every text-book on theory and practice, or diseases of children.

Before applying to this task we may, however, state at once, that there are cases of temporary constipation which do not belong to any one of the classes alluded to. More for instance than in adults, will almost every feverish disease in infants result in costiveness, no matter whether the intestinal tract is the seat of the affection or not. We need only allude to this fact, known to every pathologist and practitioner, in order to distinguish these cases of temporary constipation from the chronic disorder.

A common cause of constipation in infants is improper food. The more bulky such food, the more tendency to constipation, with the exception of those cases in which the irritation of the alimentary canal, by the unusual volume and nature of the contents, results in catarrhal discharges from the mucous membrane.

Thus, infants fed, instead of breast-milk or a proper substitute, on amylaceous food principally, especially potatoes, rice, or arrowroot, are liable to suffer from constipation. The appropriate change in the baby's diet will in all probability be all that is required to mend this abnormal condition.

But breast-milk, or its apparently proper substitute, is also apt to yield the same results. We meet with a number of babies of two or four months who empty their bowels once a day only, or once in two or three days. The consecutive disorders of general nutrition may not be very great in the beginning, but even the occasional attacks of colic, the straining (sometimes inefficient) in passing fæces, the congestion to the head and brain, and perspiration, in their efforts to procure an evacuation, are always noticeable facts which are but the precursors of more urgent symptoms. The fæces are hard, pass in small lumps, and are of a white color and cheesy appearance; now and then they are covered or mixed with a viscid mucus, the result of intestinal irritation, or even with streaks of blood, the result of straining and local lesion. The above condition and appearance are due to a large quantity of firmly coagulated caseine admixed with the fæces in a certain proportion, sometimes, however, to such an extent that the evacuation appears to consist of caseine only.

The presence of caseine in the passages in this hard and firmly coagulated condition depends on one of two causes. There is either, in the gastric secretion, too much acid for a normal digestion, or there is too much caseine in the milk.

When milk is introduced into a normally digesting stomach, it undergoes a speedy, but loose and soft coagulation, which is very easily overcome by the action of the rapidly secreted pepsine. When, however, the gastric secretion is abnormally acid,—a very frequent occurrence in young infants,—the coagulation of the milk will take place more rapidly than normal, and at the same time the coagulated mass will be hard and solid. The differences of these two conditions can be easily appreciated on noticing the masses thrown up a few minutes after nursing or feeding; loose, and with no apparent effort, or solid, in large lumps, and often with a great struggle. Whenever these masses will not be thrown up from the stomach they will pass down the intestinal tract, not at all or but little changed by the digestive process. Their size will obstruct the canal, and their dryness will keep them from being readily expelled.

We are not unfrequently in a position to recognize the cause of this condition in the color and taste of the mother's, or the mixture of the cow's milk. It is deficient in sugar, but more defective by its too large amount of caseine. The mere change of a wet nurse or a different dilution of the cow's milk is often sufficient to change the infant's digestion and evacuations at once; but the former is not always possible or expedient, and the latter must be understood. We have frequently found that a simple addition of sugar to the breast-milk would suffice to procure the necessary change, or the mere addition of sugar and water to the former dilution of cow's milk would have a similar result.

Our plan is, in the former case, simply this: to give the infant, every time, and just before being laid to the breast, from half a drachm to a drachm of loaf sugar, dissolved in a teaspoonful of tepid water; very often, a few days will exhibit a marked improvement. But in many instances this plan does not work to entire satisfaction, inasmuch as the proportion of the gastric acid to the coagulable caseine is not sufficiently influenced. What we want further is a more gradual or slower effect of the may be otherwise normal acid on the caseine. For the purpose of obtaining this end, we mix the cow's milk, if the infant be fed on such, with some thin mucilage instead of water, with the expectation that the effect of the acid will be rendered less rapid, and the coagulation less hard. Gum-arabic water will often do good service, gum being a completely indifferent substance; as a general rule, however, we prefer a decoction of barley or oatmeal, well strained, with the addition of salt and sugar, as the proper vehicle of milk. This plan holds good for breast-milk as well as for prepared cow's milk. Where the breast-milk contains too large a proportion of caseine, we replace sometimes the solution of sugar by a tablespoonful of sweetened barley-water, or strained oatmeal gruel, which is to be administered just before nursing; the latter being the preferable substance, on account of its more laxative effect.

In all such cases, however, in which the fault is more on the side of the gastric secretion than of the superabundance of caseine, it is necessary to neutralize the surplus of acid. In many we have to continue the

treatment for a long period. The antacids mostly in use are magnesia (calcined or the carbonate), bicarbonate of soda, and carbonate of lime. If the antacid effect of the three agents be considered equal, we find the bicarbonate of soda the most convenient addition, particularly to artificial food, because of its gentle laxative effect, and of its solubility. A few grains may be admixed to every meal, with happy results. We add here, that wherever antacids are indicated, the selection of the remedy will depend on the presence of either diarrhoea or constipation; the former requiring the carbonate of lime, the latter magnesia or soda.

Beside the condition of the gastric juice and the milk, or rather the disproportion between them, resulting in solid and insoluble coagulation of the caseine, we have to recognize as a frequent and important cause of constipation in infants, a certain condition of the intestinal tract. We do not mean the deficient action of the muciparous follicles of the intestines, but an insufficient degree of muscular power and action, depending on general rachitis. We understand by rachitis, by no means the well-known affection of the bones resulting in their lack of phosphates and surplus of water and fat, but consider this character of the osseous tissue as but a partial illustration of the whole morbid process. Rachitis is the condition of general malnutrition which results in the above peculiar softening of the bones during their physiological development, in the deficient formation of muscular tissue, in the abundant deposits or non-absorption of fat, together with all the symptoms attending on these and other anomalies. In

fact, there is hardly an organ, scarcely any part of the body, which is not affected to a certain degree, before the series of changes which will take place in the long bones, viz., swelled epiphyses and curved shafts, have exhibited themselves to such a degree as to be recognizable to even an untrained eye. Amongst the first symptoms which will become perceptible we count muscular debility.

The principal organs on which rachitis shows itself are: the thymus gland, which remains large beyond its normal time; the bronchial glands, which become enlarged; the thorax, with its two longitudinal grooves along the costo-cartilaginous junctures and its horizontal groove above the insertion of the diaphragm, its consecutive raising of the sternum and ensiform process, its flat dorsal and angular lateral portions, its triangular shape and general shortness, with all its consequences on the position and character of the thoracic and abdominal viscera; the cranium, with its baldness (especially posteriorly), perspiration, square shape, and local softening on the parietal and occipital bones, and with its general hyperæmia; the brain, with its congestion and tendency to effusion; the copious subcutaneous tissue, the pale surface, the muscular debility, the swelling of the epiphyses, and the curvature of the long bones. Of all the symptoms which have been enumerated, the latter is most alluded to as important, and still it is the least important, inasmuch as when it is noticed the injurious effects of the whole process have already had too much chance to exhibit themselves.

It would be out of place here to prove to what

extent general and local diseases, hereditary and acquired tendencies, are apt to generate rachitis, or in which manner rachitis is liable to give rise to consecutive diseases. But this much is evident to every pathologist, that the early recognition of rachitis amounts to a great saving of health or life. Now, there is no symptom which will show itself in its full development sooner than muscular debility in general, and muscular incompetency of the intestinal tract in particular. It is true that a trained eye will appreciate the first sign of the longitudinal thoracic groove, and the contemporaneous pain on taking hold of an infant's trunk; or that an educated finger will recognize the first beginning of local rachitic softening on the cranial bones as early as in the second or third month, sometimes; but fully as early as these symptoms, the rachitical constipation of the baby will be perceptible. An infant may be born in good condition, meconium will pass off normally, all the functions will appear normal for some time. It will look healthy, round, fat, but pale; hair is but scanty, and constipation will set in despite of there being no apparent surplus of caseine in the milk, or of acid in the gastric juice. There must be a physical cause for every abnormal function; where there is no local obstruction, no faulty secretion, apparently no improper food, the locomotive power of the intestinal tract must be looked after. It is more frequently at fault than the rest of the parts concerned in digesting. When such a constipation is found in an infant at that early period, it may be that some other cause can be found; but when at the same time or a little later the

scalp, covered with scanty hair, begins to perspire freely, and the thorax begins to look short, or respiration appears to become more abdominal than can be explained by any known morbid condition of the thoracic viscera, the diagnosis of rachitical incompetency of the intestine is tolerably safe. There can be no doubt that there are other symptoms of rachitis which, when fully developed, render the diagnosis of the disease more positive; but there is no symptom in the whole series which directs our attention so much and at such an early period to the imminent danger as this constipation. We seldom fail in being correct, when we attribute protracted constipation in an apparently healthy, but fat and pale baby, of two or three months, whose bowels have been in tolerable order during the first month of life, to rachitis. Thus, while we recognize the disease thus early, we shall not only be enabled to treat the annoying symptom rationally, but also to ward off the further development of the other threatening symptoms.

Nothing would be more incorrect than to try the effect of laxatives, on constipation depending on rachitical incompetency of the intestinal muscle. They would act momentarily, and leave the muscle more powerless than before; their place is to be taken by injections of cold water. The indications are: such a change in the food as will contribute to keeping the bowels moist and slippery, but principally such modification of food, and such medical treatment, as are known to benefit where all the symptoms of rachitis are fully developed. The mother will, according to

circumstances, have to be replaced by a good nurse, where the cause of rachitis in the baby can be traced back to the mother, or to an insufficient condition of her milk; or the nurse must be changed, for similar reasons. Very often artificial feeding is still better than either mother or wet nurse, when these cannot be found of first order. Iron and phosphates are important ingredients of any food the baby is to have; extracts or infusions of beef, boiled barley or oatmeal mixed with milk, are the principal requirements as far as food is concerned. Oatmeal, carefully strained, is to be preferred as long as the gentle laxative effect of the additional mucilage is still desirable. Iron may be given in addition, either as syr. phosphat. compos., 10 to 15 drops, or as syr. iodid. ferri, 4 to 10 drops, three times a day; and no dietetic rule known to favor a healthy general development ought to be lost sight of. As in general rachitis, cod-liver oil will prove very satisfactory, both through its general qualities, and its local effect on the mucous membrane of the intestine. The principal part of the laxative effect of colostrum is not due to its large proportion of salts, but to its amount of fat, which favors speedy locomotion of the contents of the bowels. Thus a teaspoonful or less of cod-liver oil mixed with the iron will favor the same purpose in rachitically constipated infants, while it at the same time improves their general condition. Now and then, a very obstinate case may require for a week or two, the one-hundredth part of a grain of strychnia, twice a day, in addition, or such other improvements on the above detailed plan, as

the individual judgment of the attending physician may direct. At all events, the diagnosis of a case is, to a well-educated and balanced mind, of infinitely greater value than any number of detailed rules and prescriptions.

Besides the abnormal condition of the milk, and the insufficient development and function of the muscular layers of the intestines, there exists a cause for constipation in infants which has not, to my knowledge, been touched at all in medical literature. And still it is frequent and constant, dates from the first hour of life, and for this very reason will often be recognizable in its difference from rachitical constipation, which in the large majority of cases takes its commencement in the second or third month only. This frequent and important cause I allude to, depends on the normal anatomy of the intestine, particularly the colon, of the foetus and new-born.

The length of the intestinal tract is much greater (in proportion) in the later periods of foetal life than in the adult, while it is but inconsiderable in the early months of utero-gestation. The small intestines of a foetus of eight months are twelve times as long as its body, while the proportion in the adult is but eight to one. The colon has a length two and two-third times as great as the body in a foetus at full term, while the same proportion in the adult is that of two to one. Now the ascending and transverse cola are very short in the foetus and new-born; thus the descending colon, having to make up for the difference, is the longer in proportion. While, then, the whole intestinal tract grows but

slowly in the young foetus, it increases rapidly in the maturing foetus, and diminishes in proportion some time after birth. Meanwhile the pelvis grows very slowly in the latter period of utero-gestation, and the long colon descendens, with the sigmoid flexure and rectum, finds no space for comfortable accommodation, as in later life. This disproportion remains intact, as we have had scores of opportunities to convince ourselves at the dissecting table, for several, sometimes for six or ten years.

The consequence of the long colon being crowded downwards, by a narrow abdomen, large liver, etc., into a narrow pelvis, is a number of curvatures instead of the one sigmoid flexure. Thus it happens, that in its place there is a curvature of the gut, permitting it to escape to the right; thus it happens, further, that the real sigmoid flexure is found either in the median line, or still more frequently on the right side. Thus, since this anatomical condition of the foetal and infantile colon has been appreciated, particularly since the memorable discussion of the subject in the French Academy of Medicine, in January and February, 1859, the proposition has been made to establish artificial anus in infants in the right instead of the left side, and a number of operations have been made at this place accordingly. From this point the colon turns down into the pelvis, forming the rectum, which, in accordance with the above facts, is very rarely found in infants on the left side exclusively, but almost always steps beyond the median line, and very frequently is met with mostly in the right side of the pelvis. The exact measurements

and facts may be easily reached in the literary records; suffice it here to allude to these, and to state the anatomical fact in our researches on its clinical bearing to be this: that the colon descendens in the new-born and young infant is very long in proportion; that the space to which it is confined is too narrow; that, therefore,—not to speak of other reasons leading to the same result,—it will bend; that folds and curvatures will form, and that the locomotion of the contents of such multifariously bent and curved intestines must necessarily be impeded to a greater or less extent.

Two cases, in which the flexures of the descending colon were unusually numerous, and developed in the highest degree possible, are, while they elicit a painful interest, uncommonly fitting to illustrate the physiological obstruction which may take place in the intestines at an early age. A finely developed boy was born in a family of healthy and robust parents, some five years ago. No constitutional or acquired diseases of any importance could be traced in either of them, or in the two older children; no malformation of any kind had ever occurred in either of their two families. The new-born baby did well for some twelve or fourteen hours, but no passage of meconium made its appearance, and vomiting set in about the end of eighteen or twenty hours. The finger detected no obstruction of the rectum, sphincters acted normally, and above them the finger entered what appeared to be a pouch, beyond which neither the finger nor bougie could be introduced. Frequent attempts at pushing up bougies failed, nor did injections of water forcibly made into the bowels prove any more successful.

Injection of air or gas was not resorted to. The diagnosis of mechanical obstruction at a part of the rectum or colon beyond reach was made, and confirmed by all the symptoms of such a condition—violent vomiting, etc.; the prognosis of the case expressly stated to the relatives, and Littre's operation for artificial anus held out as the only means of saving the infant's life, and accepted. On the third day the left iliac region, in front and a little above the spina anterior superior, appeared to fill up, and yielded a somewhat duller percussion sound. The operation was therefore performed at this spot, in the presence of Drs. James R. Wood, L. Voss, and some other professional gentlemen; it resulted in our finding a pouch of the descending colon filled with a large amount of meconium, which was readily discharged through the artificial opening. The patient did well for a short period, but died of peritonitis on the fifth day after the operation. The post-mortem examination yielded the following results: The part of the colon fastened to the abdominal wall was no longer dilated. Beside the consequences of peritoneal inflammation nothing was abnormal in the immediate neighborhood. All the parts above the incision, and all the other viscera were not diseased. Below the point of incision lay the colon, turned three times upon itself, three flexures covering each other in such a manner that the subjacent one was always about half an inch longer than the one above it. The lowest of the three, crowded down into the pelvis, was entirely compressed, contracted, and contained nothing but a little hardened mucus; the middle flexure contained the same mucus, and a small amount of meconium;

the upper one was filled with meconium as far as the contracted lumen of the bowel would allow, and its outer left portion was the one which had appeared dilated by the meconium crowding down from above. The inferior flexure reached beyond the median line, stretched upwards to nearly the spina anterior superior of the right side, and from there the intestine turned back in an acute angle into the pelvic cavity, doubled upon itself, reached the median line on the right of the empty bladder, and terminated as rectum in its normal place. When the bowel was removed, it measured from the point of incision in the left hypogastrium to the anus nearly fourteen inches. The ascending colon was of normal length; the transverse colon was not in its normal position, but stretched from the right hypogastrium to the left spina anterior superior, diagonally, in an almost straight line, forming an acute angle with the uppermost curvature we have described, and giving rise to the pouch we found dilated before and during the operation.

We have, then, a case of mechanical obstruction, brought about by the abnormally long descending colon, which may be taken as an arrest of development only, inasmuch as its relation to the length of the colon ascendens and transversum agrees with their foetal condition about the fourth or fifth month of utero-gestation; by the diagonal position of the transverse colon forming an acute angle with what ought to have been the descending colon; by the compression of the bowel by its own flexures, which were much more numerous than normally; by the narrowness of the new-born pelvis, the space of which was still getting more narrow by the bladder

filling up more than before ; by the infant's crying, and crowding the thoracic and abdominal viscera downwards upon the intestine, and by the tract filling up with food, fæces, air, and gas. Thus the very acts of crying and nursing, which will bring on evacuations of the bowels of the new-born, were the cause of increasing the obstruction by compressing the guts, more than three times doubled upon themselves.

We hardly know what the result would have been if, instead of the injections of water, those of air should have been made, with sufficient force and in sufficient numbers.

Not long after this case, Dr. L. called us to see a case of mechanical obstruction of the intestine, also beyond reach, with exactly the same results of examination, and the same symptoms. Our local examination by means of finger and bougies failed, as in the above-mentioned case, with the exception of our seeing a little blood oozing from the rectum after repeated attempts at pushing our examination upwards. This blood was in our opinion the proof of our tearing a thin membrane or soft mass, which we thought was but the lower portion of inflammatory conglutination. Despairing of the case, we still forced our bougie up, without having much reason to congratulate ourselves on any favorable result, and forced as large quantities of water upwards as the gut would hold this side the obstruction. We did not succeed, however ; proposed the formation of an artificial anus ; were refused, and left. Meanwhile the injections were now and then repeated by the attendants, and towards the end of the third day, twelve hours after our

visit, a large quantity of meconium was evacuated, vomiting ceased, and the baby was saved.

We have no reasonable doubt but that this latter case of intestinal obstruction was of the same nature as in the first described instance. We consider the two cases, and have therefore described them with some minuteness, as valuable contributions to the doctrine of congenital obstructions, and have no hesitation in expressing our belief that many a case of supposed imperforate colon may have been of the character we have tried to describe. Thus, the indications for inflating, and by inflating turning, and thereby opening the guts, and for all such means as the ingenuity and knowledge of the practitioner will command, ought not to be set aside until the case is really hopeless. Besides, not many parents will consent to the operation for artificial anus; and to what extent, and at what late period a desperate-looking case may be relieved, our second case is amply competent to show.

But let us not forget that it was no point of the chapter on imperforate rectum or colon we meant to elucidate, but that we spoke of infantile constipation. The object, however, of my reports is obvious enough. The cases we have narrated suffice to show to what extent the normal anatomy of the foetal guts, when arrested in their development to but a slight degree, can prove injurious in the born infant; and the few facts set forth by us concerning this anatomical condition are of such a nature that every medical man will be able to verify them in post-mortem examinations.

If we have succeeded in showing that such cases of

constipation in very young infants, which date from birth (not, as in rhachitis, from the second or third month), occur in otherwise healthy individuals, and in which the evacuations of the bowels are normal enough, with the exception of the *faeces* being somewhat dry, in consequence of the absorption of water being facilitated by the extensive surface of the mucous membrane of the long and curved colon descendens—will result from the simple fact of the length and curvatures of the colon, we have at the same time succeeded in pointing out the treatment. For it is of just as much importance to learn which cases ought to be left alone, as it is to find the indications for the medicinal treatment of those requiring it. The cases we have alluded to require no treatment except the proper diet, and cold-water injections, until the growth of the pelvis and the increase in size of the abdominal and pelvic cavities give a natural and favorable termination to a condition which must be understood, to avoid mistakes in its appreciation and treatment.

A REMARKABLE CASE OF FOLLICULAR VULVITIS.

BY B. F. DAWSON, M.D.,

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Miss C—, aged about sixty, presented herself at Prof. T. G. Thomas' clinic at the College of Physicians and Surgeons, November, 1868, suffering from the above disease. The history she gave of herself was as follows: That when fifteen years old, she at times was

aware of a slight tingling sensation at the vulva, which was not, however, sufficiently troublesome to cause her to complain or seek medical advice. This tingling, however, recurred at shorter intervals before many months, and had increased to an exceedingly annoying itching in the space of a little over one year. To relieve this itching, which was especially distressing at night, she resorted to scratching, which, however, she soon found aggravated her troubles by further irritating the mucous surfaces of the labia, which soon began to exude an offensive semi-purulent secretion. Thus her distress gradually increased in severity, the whole vulva ultimately becoming the seat of the most insufferable combination of burning and itching, which at the end of 3 or 4 years debarred her from society, and made her dread the approach of night. In the mean while she had been using various washes, ointments, caustics, vaginal injections, etc., but all to no purpose, excepting that the afore-mentioned offensive semi-purulent discharge had ceased, and in its place a gray sebaceous material was coated over the mucous surfaces of both the labia.

Year by year Miss C——'s condition grew worse and worse; she successively consulted various country and city physicians, but from none did she obtain more than a temporary relief. She has in her desperation even consulted clairvoyants, who prescribed various infusions of herbs, but with negative result.

Opium, which had been prescribed by some of her physicians, she soon found was the only means whereby she could obtain some respite from her distress, and

this she has been taking daily for the last thirty years. At first using it at night in small doses to induce sleep, but gradually resorting to it more and more frequently during both day and night, she now finds herself compelled to take from half a drachm to a drachm of Magendie's solution of morphia every three or four hours during the twenty-four. Her strength having also broken down, she resorted to the use of alcoholic stimulants, which also she now indulges in quite freely. About four years since she came under the care of Prof. C. A. Budd, of this city, who, as he has informed me, found occlusion of the ostium vaginæ, the labia minora having been united by adhesive inflammation, as was also slightly the case with the labia majora. He therefore divided the attached surfaces and found that there was also considerable vaginal and uterine catarrh, and that the vulva was the seat of excessive follicular disease. He found that the vaginal and uterine catarrh was most readily mitigated by frequent applications of a sixty-grain solution of the nitrate of silver, but that the vulvitis seemed incurable.

The above history of her case was all that the patient could give. An examination of the parts was then made by Prof. Thomas, in the presence of Drs. Brown, Ward, and myself, when the following facts were ascertained: On parting the labia (which had to be done with the utmost gentleness, as the patient suffered and flinched at every attempt), the mucous membrane of the labia, as well as the fourchette, was found completely covered over by a thick cheesy substance, of a dirty-cream color, and which emitted a peculiarly offen-

sive odor. The vulva was not appreciably swollen; the mucous membrane of the vagina appeared normal, with the exception of a very slight senile leucorrhœa; the uterus was found on measurement to be but one and a half inches in length, and beyond this senile atrophy, was apparently perfectly healthy. On interrogating the patient further, nothing beyond what she had already stated could be ascertained. Her bowels never troubled her, excepting now and then a slight constipation, and her water had always been natural as to amount and quantity, but during its passage her distress was slightly aggravated by its action on the affected parts. The physical condition of the patient was quite fair, considering her age, and the length of time the disease had been distressing her.

At the completion of the examination, the case was pronounced to be one of *follicular vulvitis*, and it was decided that no relief could be hoped for except by an operation, which Dr. Thomas decided to perform. To this the patient was most ready to accede; in fact, she was apparently willing to undergo anything that would offer the slightest hope of mitigating her sufferings.

The operation which Dr. Thomas had decided upon was to completely remove the whole of the affected mucous membrane of the vulva, and, of course, with it the follicles which were the seat of the disease, hoping that after the removal of the affected membrane the denuded surfaces would ultimately be covered with healthy and unaffected tissue, the disease thus being eradicated with the knife.

The patient was accordingly put under the influence of ether, after which she was carried into the amphitheatre, in order that the college class might witness the operation. With an ordinary scalpel, Dr. Thomas gradually dissected off the mucous membrane of the labia to such a depth as to insure the removal of all the follicles which might, if left, act as germinating points from which the disease might again spread. The exceeding weakness the patient evinced during the operation, however, compelled it to be performed with unexpected hurry. The hemorrhage which occurred was very slight, and was readily controlled with the actual cautery, by the irons of which both denuded surfaces were carefully and thoroughly singed; simple cold-water dressing was applied, and the patient removed to her house, where I afterwards attended her.

On account of her age, Miss C. suffered considerable prostration from the operation, but as the distressing itching had ceased, she was improved in spirits, and felt confident that at last she had been cured. For at least three weeks everything progressed favorably, the denuded surfaces granulated nicely, and the healed portions seemed up to this time to be perfectly healthy. She still, however, continued her doses of morphia, the long use of which had constituted her an opium-eater, all attempts to do away with the use of the drug proving useless, as she insisted upon taking Magendie's solution to the amount of 3j. morning, noon, and night, which, however, in no instance produced more than a quieting effect.

The vulva was dressed by myself daily with lint and

diluted Labarague's solution, and three weeks after the operation the denuded surfaces of the labia had almost completely healed over, and presented a healthy appearance. The patient was herself sure that she had at last been cured, having up to this time been perfectly free from irritation, excepting perhaps that which sometimes accompanies the process of cicatrization. Deeming it no longer necessary to visit her daily, I allowed two days to intervene before my next visit, directing, however, the continuance of the same dressing in the mean time. On my next visit, I learnt that although the surfaces were still healthy in appearance, and, with the exception of two small points, completely healed, the patient complained of having had a slight return of the itching during the night, and had waked finding herself scratching the vulva. Finding that there was no real cause for the itching, I placed no importance on her statement, and did not visit her again for two or three days. Again the patient complained of having experienced the itching still more intensely during the two previous nights, and that it still continued. On careful examination I discovered on the left labium, on its internal surface, several minute spots, of a slightly lighter color than the surrounding tissue, and apparently somewhat elevated, and I at once concluded that they were a few of the diseased solitary glands which had escaped removal with the knife or destruction by the actual cautery. I therefore carefully touched each point with the solid nitrate of silver, and continued the same dressing as before. For the next day or two there was no marked change

for the better, but on the contrary on the third day the patient complained still more of the itching, and there was also a considerable increase of the irritating spots, which in some places were congregated into small clusters. It was now apparent that the disease was fast returning, and accordingly she was again seen by Dr. Thomas, one month after the operation. The vulva was now the seat of constant and distressing itching, and on both labia there were quite large spots of follicular degeneration, especially on the left, where there was an aggregation of the affected follicles about one-half inch long and one-fourth wide. This being the condition, Dr. Thomas thought it might be advisable to attempt the removal of these affected portions; but the patient being too weak at present, she was requested to present herself at the College on Tuesday, January 12th, 1869. In the mean time everything was done to restore her strength, but her age, the habit of opium-eating, which she persisted in, as well as her distress, seemed to preclude the possibility of restoring her to good health, and on the day appointed for the second operation she was unable to be removed to the college. Her condition was also greatly aggravated, the disease having extended again almost over the whole vulva, and her present state was as bad as before the operation.

Being completely discouraged, she was advised by her friends to enter St. Luke's Hospital, in this city, which she did, and where, up to date (April 12th, 1869), she remains in the same condition as when last seen by myself, being too weak for an operation, and in all

probability will never gain sufficient strength to undergo the necessary operation.

That the above case is one of peculiar interest is evident, illustrating, as it does, the obstinate character of that most distressing affection, follicular vulvitis. It is fortunate, however, that the disease does not often assume so obstinate and severe a character, for to such sufferer life is really possessed of little pleasure.

With regard to the operation performed by Dr. Thomas, it is but fair to attribute its ultimate failure to the fact that it had, unexpectedly and unavoidably, to be performed with the utmost dispatch; and that consequent upon this, some of the diseased follicles escaped removal, and served as seed for the future outbreak of the disease. Had not these follicles, however, been left, I think it may with safety be said that the patient would have been forever relieved from her sufferings, as has been the result in less severe cases where the operation has been performed carefully and under less restraint.

NOTE.—Since the above went to press, I have learnt that Dr. Gurdon Buck has, within a day or two, excised the vulva in St. Luke's Hospital. In the next number, therefore, I will give the particulars and results of this second operation.

B. F. D.

REVIEW OF LITERATURE PERTAINING TO

I.

DISEASES OF WOMEN.

I.

Memoir on the Utricular Glands of the Uterus, and on the Glandular Organ of New Formation which, during Pregnancy, is Developed in the Uterus of the Mammalia and of the Human Species. (By Professor G. ERCOLONI. Résumé by the author.)

THIS memoir may be divided into two distinct parts. The first treats of the utricular glands of the mucous membrane of the body of the uterus, while the second contains an account of the new glandular organ developed during pregnancy and constituting, as mentioned above, the maternal portion of the placenta.

In the *first part* he relates the history of the discovery of the utricular glands from Malpighi, down to the brothers Weber and Baer, and, after mentioning the doctrines of Burkhard, Eschricht, Leydig, Cost, Bakow, and Myddelton, about the uterine glands of the human species and of several animals, he proceeds to report the observations made by Sharpey and accepted by Bischoff and Weber, who believe that some of the villi of the chorion, at least in the bitch, enter the first portions of the utricular glands, in order to form the placenta.

After relating the opinion of Sharpey, the author first cites the one entertained by Guret, that in the mare all the villi of the chorion penetrate into the interior of the utricular glands; mentioning next the opinion of Bischoff, and more particularly of Spiegelberg, who believes the cotyledons of the uterus in the ruminating animals only to be mere expansions or dilatations of the same glands.

The insufficiency of all these theories is proved in the second part of the Memoir, where the author treats of the placenta proper.

Finally, the author gives the structure of the uterine glands in the mare, the cow, the bitch, the cat, the porcupine, and the woman. He shows the difference existing in the uterus in the impregnated and non-impregnated state, and that these glands are entirely wanting in the female of certain animals, like the rat, the rabbit, etc.

Having compared the researches with regard to the uterine glands, the author is led to study also the differences occurring in the uterine mucous membrane.

The new facts described in the first part of the Memoir and the consequences resulting from them are contained in the following conclusions:

The uterine mucous membrane of the woman and of certain animals, such as the mare, is represented by simple epithelial layers.

The small and very narrow inflexions of the epithelial layer in certain animals (rabbit), as well as the elevations of the sub-epithelial connective tissue with their numerous inflexions, forming numerous folds in the uterine mucous membrane on its internal surface (rat, dog), are not sufficient to establish any real difference between the uterine mucous membrane of the mammalia and that of the woman; still less could it be admitted, as some anatomists have done, that the uterus of the woman is without a mucous membrane.

The utricular glands of the uterus are ordinarily very numerous, and open into the epithelial layer of the mucous membrane. They either cannot be separated in any way from the uterine tissue, as in the woman, or they form a particular membrane, being raised and disposed of in folds, more or less elevated, or with many excavations like garlands in the same folds (bitch, mare, cat).

The large folds with their numerous festoon-like excavations of the mucous membrane of the uterus, represent enormous glandular follicles, and replace to a certain extent the uterine glands. This, in fact, is observed in animals without utricular glands.

Some very distinguished anatomists have not found them in the rat. The author has assured himself of their being absent in the rabbit.

The want of the utricular glands in the womb of some animals, having no placenta, is a pretty important fact, for it weakens the opinion of those who think that the glands concur in the formation of the placenta of animals in which it is single.

The uterine glands of those animals in which they have been studied, differ considerably from each other both in their form, and in the kind of epithelium lining their cavity.

They consist, in the mare, of a uniform canal, turning spirally on itself.

In the *cow*, the canal of the gland shows irregular prolongations, having the form of a sac, or of gibbous appendices.

In the bitch, these appendices are still larger, being present in every gland, for which reason they are called ramous.

These glands are pyriform in the *cat*, and only in the more developed or larger ones, sinuous swellings are to be seen in their deeper sections. In the *porcupine*, they resemble a sudoriferous gland of man.

The inner epithelium is of the pavement kind in the bitch and cat. It is, on the contrary, cylinder-shaped in the mare and cow.

Since the observations of Sharpey and Weber, it has been considered a well-proved fact, that there are in the womb of some animals (dog and cat), two kinds of uterine glands, called, from their shape and size, the one simple, the other ramous. The author proves in his Memoir, that these two kinds of glands do not exist in the womb of the bitch, and that in the cat, they are the same glands varying in volume among themselves. Moreover, this difference of bulk is found, less prominent than in the cat, in the utricular glands of the womb of all the animals, as well as of the human female. In accordance with these observations, it is necessary to abandon the opinion held heretofore by anatomists and physiologists, that these two kinds of glands are charged with a double and very different function, namely, that of the simple glands to secrete the mucus, the ramous glands to enter into the formation of the placenta.

The author, however, demonstrates that there are really two distinct kinds of uterine glands in the cow and sheep. The utricular or ramous kind, of which already Malpighi has spoken, varies a little in volume, but is always well developed, while the simple glands, which have been described by nobody before the author, are always very small, result from the very narrow and sinuous inflexions of the epithelial surface of the mucous membrane. But, even these very minute glands, which the author calls follicles, in order to distinguish them from the larger kind, differ from each other in their size and length. They are found disseminated over the whole inner surface of the uterus, meeting each other at points corresponding to the cotyledons. In the non-impregnated uterus the cotyledons are covered by a fine smooth and compact layer of epithelium, representing the most simple epithelial form of the uterine mucous membrane, as it is found in the woman. In the rabbit, instead of the uterine glands, there are on the uterine mucous membrane, which is represented by simple epithelial layers, numerous short inflexions forming a sort of simple, glandular follicles.

In all those animals, and also in the woman, furnished with uterine glands, they increase in volume during pregnancy. In

the bitch, those glandular follicles, denominated simple by the author, increase also in volume during that period.

The development of the glandular follicles of the womb in the rabbit is very remarkable, and this increase in bulk is of still greater importance. In those places in which the eggs are retained after fecundation, the follicles, after a remarkable increase, are changed to a *glandular organ*, viz.: to the maternal portion of the placenta.

The augmentation of the follicles of parts of the uterine horns remaining empty, produces an elevation of the mucous membrane in the shape of large and complicated folds representing enormous follicles, which, during pregnancy, must perform the function of the utricular glands, which, as has already been mentioned, do not exist in the rabbit.

Where the placenta is villous or expanded, as, for instance, in the mare, all the utricular glands, even after the formation of the *glandular organs* or *maternal placenta*, pour the secreted liquid into the space between the chorion and the womb.

The uterine surface of the chorion of the mare is covered with an epithelial layer which lines also the villous tufts, and is continuous with the epithelium covering the villous processes themselves. The epithelial layer of the chorion might represent the deciduous membrane in the mare.

If the placenta is multiple, as in the ruminants, and more especially in the cow, the utricular glands also pour out their liquid between the chorion and the womb.

The epithelial layer, constituting the decidua in these animals, is still more remarkable than in the mare.

The utricular glands, existing in the cotyledons, called rudimentary in the empty uterus, as well as in the simple glandular follicles which we have shown, join each other in these portions of the uterus, open, as probably in the base of funnel-shaped elevators, which constitute the new-formed glandular portion in the cotyledons of the gravid womb. The very restricted number of utricular glands in this region, the thinness of the simple follicles, and still more the attenuation which the walls of the glands undergo, the transparency and diaphaneity which their internal epithelium acquires, have made it impossible to see with precision and certainty the point of origin, in the interior of the glandular organ, of the glands and follicles which are seen clearly to slide into the peduncle of the cotyledon in a transverse section; in a vertical section they are seen very badly and incomplete, the more so, as they are then near the surface of the peduncle, from which the glandular organ takes its origin.

When the placenta is unilobular, and furnished with utricular glands, as in the carnivorous animals, those corresponding to that place where the placenta is formed, open into the inferior portion, or cul-de-sac, of the new formed glandular follicles which are but festooned folds of the uterine mucous membrane changed to a *glandular* organ. In the other portion of the uterus of both animals and man, the secretion is poured out between the uterus and the chorion.

The deciduous membrane in the woman, as well as those called *catamenial* or *menstrual* membranes, are simply produced by the utricular glands. The deciduous membrane can for this reason not be considered a development of the uterine mucous membrane, and still less a development resulting from the extremities of these glands, nor of the cellular tissue or the vessels which surround them, as it has been represented by Weber and Bischoff.

The numerous openings or holes giving to the uterine decidua of the woman the appearance of a sieve, are only the points corresponding to the aperture of the utricular glands in the interior of the uterus kept open by the product which traverses them continually.

In the cow the decidua also exists, although its occurrence there has been denied the same as in the mare, on account of its extreme thinness. In this case the decidua has the same origin as in the human species. But, as it is very perceptible in these animals, and especially in the cow, it is not only very thin, but also attached to the chorion and not to the uterus, as it is perceptible in the woman, nor do the numerous openings which are found in the latter exist there.

In the decidua of the cow, instead of the above-named perforations, there exists in their place, a thickening of some of its elements, which latter are infiltrated in the cells of the decidua and even in the connective tissue of the chorion.

The thickened portions have been named by Burkhard small "écailles" of the chorion, of which, however, he has neither mentioned the origin nor the signification. It is an important point, that, by reverse peculiarities in the structure of the woman and the cow, the origin and the constitution of the decidua are cleared up.

The observations just mentioned, confirm the fact that, no matter what be the form of the placenta in animals, the villousities of the chorion never penetrate into the utricular glands of the womb, as a number of anatomists have asserted.

The increase of volume of the utricular glands during pregnancy, is constant in the human species, as well as in the dif-

ferent animals, which proves beyond doubt that they must accomplish an important function in the nutrition of the fœtus. The author, however, only suggests as an hypothesis, that their function consists in furnishing the material for the nutrition of the fœtus previous to the development of the new glandular organ, or maternal portion of the placenta, with which the villi of the chorion are brought in contact as soon as they become vascularized.

The author also adds that, although he has demonstrated that the liquid secreted by the utricular glands does not always mix with that which separates the maternal portion of the placenta, as it occurs in carnivorous animals; still this fact, so clearly demonstrated in certain animals, leads naturally to the supposition that these glands prepare some nutritive element, important for the fœtus, during the entire period of gestation. This can by all means be supposed, if the great number of these glands is taken into consideration, their constant increase of volume during gestation, the truly remarkable quantity of liquid which they discharge and which collects in certain animals, such as the mare, between the chorion and the uterus; and finally, if one considers that the uterine mucous membrane increases considerably in bulk, and forms elevated and complicated folds, which represent gigantic glandular follicles in the uterus of animals which, as in the rabbit, have no utricular glands.—*Journal de l'Anatomie et de la Physiologie*.

In the *second part* of his memoir the author treats of the new *glandular organ* developed during pregnancy in the uterus of the females of the mammifera, and of the human species, which constitutes in all of these the maternal portion of the placenta.

Of those animals with a villous and expanded placenta the author has examined that of the solipeds and described that of the mare. Of those animals having a multiple placenta, he chose the cow from the ruminating species, as it seemed to him to be more simple. Of those animals having a unique placenta, he has studied its formation in the rabbit and described it in the bitch and cat. Finally he describes the human placenta, and mentions the difference existing between it and that of the animals.

The idea that the placenta separates a particular fluid or uterine milk for the nutrition of the fœtus has been advanced by some ancient anatomists and physiologists, and the author mentions it especially in his historical researches; he also mentions the discovery of M. Cl. Bernard, of the existence of glycogenic cells in the unique placenta of animals. We restrict, however, our résumé to the anatomical observations and facts.

The author declares that the last conclusion at which he has arrived from his numerous researches is, that there is formed during pregnancy, in the uterus of the mammifera and of the woman, a new *glandular organ*, with which the villi of the chorion of the foetal portion of the placenta becomes connected. The villi of the chorion enter the cavities of the glandular organ for the purpose of absorbing the liquid there secreted.

In order to be clearer, the author reduces the physiological idea, as maintained by him, to elementary anatomical forms; he considers the new secreting organ to have the typical form of a *simple glandular follicle*, while the absorbing portion of the foetal placenta has the shape of a vascular loop or villus; they are represented in four schematic figures. The villous placentas give us the most simple type which can be had of the double structure of the placenta. Vascular tufts arise from the chorion, and also villous growths, the foetal portion of the placenta, which pass into the simple glandular follicles (maternal placenta), of which no trace exists in the empty uterus.

In the cotyledons of the cow, the glandular organ is complicated, but it does not lose its elementary form of a simple follicle. The only change which takes place is in the proximity and position of the follicles, which are no longer found vertical, but parallel to the uterine surface; they are placed one above the other at the place where the placentas are formed. If the placenta is unique (in carnivorous animals, cats, dogs) the typical form of the glandular follicle does not disappear. But instead of repeating itself by preserving the most simple form, as in the cow, the glandular follicle is prolonged enormously, like a tubular gland, and becomes remarkably convoluted. Although under these circumstances the chorion adheres to the foetal surface of the placenta, the openings of the follicles can be perceived, through which the villi of the chorion enter, as well as the cul-de sac of the follicles.

In the human species the glandular organ deviates still more from the typical form of the simple *glandular follicle*. In the woman the fundamental portions of these organs, viz. : the walls and cells (secreting organ and secretion), persist, while the shape of the follicle is lost completely. In the woman, contrary to what is observed in the animals, the surface of the uterus in contact with the placenta is covered by a particular membrane known under the name of *decidua serotina*. This membrane, derived from the connective sub mucous tissue of the uterus, is the stroma, from which the glandular organ takes its origin, embracing and investing the villi of the foetal placenta in all their numerous subdivisions. The glandular organ accompanies the

villi up to the chorion, and after investing its walls here with fibrous tissue, it fixes solidly the vessels of which the umbilical cord is formed.

Conclusions.

After these ideas and general views, the author studies minutely the facts in the different species of the above-mentioned animals, and he recapitulates all his observations in the following conclusions:

In the womb of all mammifera, as well as in that of the woman, a new organ, called glandular, is formed during pregnancy, the cavities of which are always entered by the villi of the chorion.

In all these cases the placenta is made up of two portions, entirely distinct by their anatomical structure as well as function; the foetal portion being vascular, absorbing; the maternal portion *glandular* and secreting.

If the blood of the mother supplies in every case the elements for the formation and secretion of the new glandular organ, the vessels of the mother never anastomose, nor do they come in immediate contact with those of the foetal placenta; in other words, the villi of the foetal placenta are always in contact, and moistened by the fluid which is secreted by the new glandular organ. Consequently the doctrine universally adopted, that the nutrition of the foetus is established by an endo- and exosmotic exchange of the material between the vessels of the mother and those of the foetus, seems to become untenable. In the first period of extra-uterine life the children are nourished by the maternal milk, the absorption taking place in the intestinal villi; in the same manner, during intra-uterine life the foetus is nourished by means of a liquid or uterine milk, secreted by a glandular organ, and absorbed by the villi of the chorion.

The new *glandular organ*, or maternal portion of the placenta, is developed at different periods of gestation in the different species of animals. It is formed all over the internal surface of the uterus in those cases where the placenta is unique, as in the solipeds; in some limited portions of the uterus (cotyledons), where the placentas are multiple (ruminating animals); and finally only in that section where the ovum is attached, whenever the placenta is unique (gnawing, carnivorous animals and the human species).

The form of the new glandular organ is modified in its development, according to the different kinds of placenta. In the animals, it preserves always the simple form of an open glandular follicle. The typical form of the glandular organ is not found in our species.

The anatomical cause of the differences between the animals and our species is, that in the former the new glandular organ is formed by a modification or transformation of the pre-existing uterine mucous membrane, while in the woman this portion of the placenta is formed by a stroma which is itself of new formation, being produced by the connective tissue of the internal surface of the uterus. This stroma is known to anatomists under the name of *decidua serotina*, which is absent in animals, for the above-mentioned reason.

The most simple form of the glandular organ is that found in the villous placenta. Before describing it in the mare, the author gives a résumé of the opinions prevalent since Ruini, who stated that in this animal the uterine surface was covered by a kind of red flesh (*carnaccia rossa*), up to the anatomists of our time, who agree in the belief that the mucous membrane is enlarged, tumefied, and contains numerous excavations. The author demonstrates that this tumefaction is really a new formation, extending over the entire uterine surface, of a compact layer of *glandular follicles*, of which no trace exists during the non-impregnated state.

Pregnancy at full term.—It is evident that the glandular organ takes its origin from the sub-epithelial or sub-mucous tissue, and that it forms simple glandular follicles, a few of which only have a double or even triple cul-de-sac.

The follicles have a height of from $1\frac{1}{2}$ to 2 millimetres; their diameter changes, because they are pyriform. Below their opening into the cavity they are $\frac{1}{10}$ of a millim.; from 4-5 hundredths towards the middle, from 8-12 at their bases. The wall of each follicle is surrounded externally by the "*unitif*" tissue of the mucous membrane of the uterus, from the midst of which the vessels arise and push through, forming a close network around the follicles.

The internal surface of the follicles is covered entirely by a pavement epithelium. Each villus of the chorion penetrates into one of these follicles.

Uterine cotyledons of the ruminating animals.—The author gives an historical analysis of the doctrines with regard to the structure and function of the uterine cotyledons, and then explains the results of his observations. He shows that only the peduncles of the cotyledons of the pregnant uterus are the original and permanent portion, that is, the cotyledons of the empty womb, and that the most notable portion formed upon these during pregnancy is the glandular organ, that is, the maternal portion of the placenta, which, after delivery, disappears completely in course of time.

It remains to describe by what histogenetic process the new

or glandular portion of the cotyledons is developed as well as the precise period of gestation at which the glandular follicles begin to be formed in the pregnant uterus of the solipeds. The observations made by the author on the gnawing (rabbit) as well as on the carnivorous animals (dog), allow us to perceive the process by which the maternal placenta of the mare and the cow is formed.

The Unique Placenta.—The historical researches preceding the investigation of the unique placenta in the animals and the woman, and the observations made by the author, have brought him to this important conclusion: that the type after which the glandular organ, that is, the maternal portion of the placenta, is formed, differs in the animal from that of the human species.

It remains an open question, whether the placenta of the ape is formed after the type of the human placenta, or whether it is generated, as in the other mammiferæ. The impossibility of obtaining uteri of pregnant apes has not permitted him to answer this important question. Thus restricting his investigations to the unique placenta of rabbits, bitches, and cats, he has demonstrated that the maternal placenta has the same form in all these animals, although in the uterus of the rabbit the utricular glands are wanting, which are very much developed in the other animals.

In the dog, cat, and rabbit the complement of the true glandular follicles, which constitute the maternal portion of the placenta, is made up by a new formation of the "*unitif*" tissue of the womb, dispersed throughout the mucous follicles in the rabbit, or located in the folds of the mucous membrane in the bitch.

Notwithstanding this, the glandular follicles of the unique placentas do not lose the form peculiar to the fundamental type of the common simple follicles. The modifications refer only to the size, and the extremely sinuous course of the follicles, as well as to the numerous communications existing between each other (bitch). The base of each follicle remains always very distinctly in the uterine part of the placenta, and the openings are also perceptible on the foetal portion. The villi of the chorion, constituting the foetal portion of the placenta, penetrate into these openings in the interior of the sinuous follicles.

The chorion adheres to the foetal surface of the placenta, whenever the placenta is uniform.

Maternal Placenta.—The method of formation, regulating the development of the maternal placenta, is uniform. It is only the manner which varies in the different species of placentas. There exists, however, nowhere only a simple repletion, or enlargement of a pre-existing glandular form; but, on the con-

trary, there is always a new formation of conjunctive tissue, vessels, and well-defined forms of true glandular organs, so that the maternal placenta must not be regarded as a simple modification of the mucous membrane, but as a formation of a new organ, having a transitory and distinct function, and which in the non-impregnated state is entirely wanting.

After delivery, the maternal placenta remains intact in the womb of those having a villous and multiform placenta, and is afterwards gradually destroyed.

In the mare, no trace of it is left in any part of the womb; in the cow it exists previous to pregnancy, and after delivery there is found the site of the places where the new glandular organ was formed. These points are known under the name of *rudimentary cotyledons*.

In those animals in which the placenta is unique, that part of the womb occupied previously by the placenta remains after delivery, covered by a thicker mucous membrane, and with elevated edges.

The author has followed up this new observation, and he has remarked that soon after delivery in the bitch it is flat, enlarged, and covered by small shreds; three days later, instead of being plain, it appeared as if it was formed of numerous elevations; this change is to be attributed to the already very remarkable diminution of the horns of the womb. If these folds are examined attentively, they are bound to undergo fatty degeneration, which in course of time destroys them completely. The author is assured that they have disappeared entirely at the end of thirty days.

The complete expulsion of the maternal placenta occurs in the human species, and therefore it is only in the woman that a traumatic lesion takes place, the effect of a laceration of organs, which exposes the raw conjunctive tissue throughout the whole extent where it was covered by the placenta.

In animals having a unique placenta, the above-mentioned lesion is confined to the "*unitif*" tissue of the folds of the mucous membrane, which follows their elevation, and to which is due the perfection of the glandular follicles. Briefly, it is the new-formed portion of the placenta which is torn and detached. The contraction of the womb, and the approach of the parts by the diminution of the volume of the uterus, give a prompt and efficient remedy to the slight lesion.

Before describing the structure of the human placenta, the author investigated the structure of the true, or direct deciduous membrane, and that of the serotine, or tardy deciduous membrane.

The anatomical examination has demonstrated, as mentioned

in the first part of the memoir, that the uterine decidua is a product of exudation, resulting principally from matter exuded by the uterine glands. As soon as the ovum arrives in the uterus, the inner surface of which is covered by the decidua, it receives also a covering which constitutes the decidua reflexa.

In the woman, it is not the uterine mucous membrane proper which develops, as it does in animals, for forming the glandular organ, or maternal placenta, but the organ is derived entirely from the newly formed tissue furnished by the sub-mucous connective tissue of the uterus. This stroma was called by the old anatomists decidua serotina. Of the anatomists of the present time, M. Robin was the first to describe the cellular structure of this membrane.

The fundamental and typical parts of the glandular tissues are preserved in the maternal portion of the placenta. All the accessory parts, that is, those regarding the form of a glandular follicle, are completely destroyed.

The cellular structure of the decidua *serotina*, covering the uterine surface of the placenta, can also be very easily traced on the foetal surface covered by the chorion. With regard to this, it is proved beyond doubt, that the *serotina* penetrates into the interior of the placenta. By making a careful examination, it can also be perceived that, in the interior of the placenta, the cells of the serotina are changed rapidly in several places into true fibrous tissue, mainly for the purpose of investing the large lacunæ of the placenta containing the maternal blood.

The same transformation occurs throughout the thickness of the decidua serotina, in order to form a solid wall for the utero-placental veins before they reach the womb. Moreover, the serotina extends into the interior of the placenta, and invests the villi of the foetal placenta as far as the chorion, following them in all their numerous ramifications.

The cells of the serotina undergo the greatest and most rapid changes. The most important consists in the formation of the sheath which it furnishes to all the villi of the foetal placenta. This sheath is formed by a fibrous membrane, which appears structureless, and by an internal epithelial layer, both of which constitute the fundamental parts of the glandular organs.

Viewing it in the light of philosophical anatomy, it may be said that the decidua serotina represents, in the woman, the glandular organ of the placenta of those animals in which the presence of this serotinous membrane has been denied by everybody.

In the vicinity of the chorion those portions of the decidua serotina, constituting the glandular organ in the woman, are changed gradually into fibrous tissue, forming thus strong cords

which fix the vessels firmly, from which the villi of the chorion proceed. The author has had occasion to observe this fact, which had occurred, in an abnormal manner, very near the serotina in a diseased aborted placenta.

After vessels of the foetal placenta have been invested by the serotinous membrane, after its transformation into a glandular organ, the numerous villi issuing therefrom push before them, while growing, the walls of the sheath, and thus they remain covered in this manner like fingers by a glove.

The blood of the mother thus bathes directly the external wall of the sheath supplied by the serotina to the villi, and the villi of the foetal placenta are bathed, and in contact only, with the liquid secreted by the cells of the glandular organ, being as it were the uterine milk of the mother.

In the human species alone, the arteries and utero-placental veins are not distributed in trunks and branches, as is the case with the animals. The maternal blood is distributed in the interior of the placenta in cavities or lacunæ which communicate with each other, and are in contact from the foetal part with the chorion, and with the serotinous membrane from the side of the uterus. In these cavities, filled with blood, the villi are suspended, covered by the glandular organ, which is furnished by the membrana serotina.

The solid union of the vessels of the chorion with the serotina, the internal prolongations of the latter, which unite with the prolongations of the chorion, limit the distention of the cavities or placental sinuses, which would naturally take place by the arterial blood which constantly is carried from the mother into the placenta.

The venous sinuses, which are also covered by the serotina, return the blood which has performed its function to the mother by means of the utero-placental veins. In the human placenta the arterial blood of the mother mingles necessarily with the returned venous blood in the placenta; we have only in the human species this kind of circulation in the lacunæ or sinuses, and it is an altered blood of the mother itself which returns from the placenta into the general circulation.

[The above is a translation of an extract in French, made by the author, an Italian, himself. With the most attentive reading, it was impossible to always get at the meaning of the phrases, the author being evidently not very conversant with the French language. The article, however, contained so many new and interesting points, that we have given, as near as possible, a verbatim translation, leaving out only those portions, the sense of which could not possibly be made out.—ED.]

H. HÖNIG, Assist. to the Gynecological Clinic of Bonn. Removal of a large Fibrous Polypus.—*Berliner klin. Wochenschrift*, No. 6, 1869.

Margarethe D., aged 41 years, was received in the clinic May 25th, 1868. Patient is unmarried and has had no children. She always enjoyed good health and menstruated regularly till the last three years, when moderate hemorrhages took place from the vagina, the blood being of a watery but otherwise normal condition. In May, 1867, a swelling was noticed at the right side of the vulva, of an oedematous appearance. It was painless, elastic and ill-defined, and protruded partially from the opening. No inconvenience was experienced, but a feeling of tension, and at times a difficulty in passing the urine. The finger could be easily introduced up to the external os, which was found to be normal. After keeping the patient in bed for some weeks, and administering laxative and resorbing remedies, the swelling was said to have disappeared in October, 1867. It returned, however, after a few months, grew larger, and caused considerable dysuria. The same remedies having been used, the swelling disappeared again, only a hard spot remaining at the original seat. In January, 1868, the patient again applied to her physician. The tumor had become quite large, rendering defecation and the emptying of the bladder very difficult. A portion of the tumor, which protruded from the vagina, had been ligated and cut off in May. It was of the size of a child's head, and weighed over 2 pounds.

The patient was examined on May 25th. Her general health is poor; she looks pale and anæmic. In front of the external genitals a swelling is found of the size of a fist, which is ulcerated on some places, and covered with black crusts. The clitoris is immediately above the tumor. The urethra opens to the right of the swelling in a fissure of about one inch in length. The hymen, being torn in a few places but otherwise normal, is found to continue over the swelling. The finger can be introduced only over the posterior commissure. Its introduction causes a great deal of pain, and is followed by a profuse discharge of sero-bloody liquid mixed with fibrinous coagula; the os cannot be reached; a swelling is also found within the vagina of still greater circumference than the outer one.

The patient was put under the influence of chloroform, May 27th. The adhesion of the hymen was found to be superficial, and was easily torn with the finger. By introducing the hand and grasping the tumor it was ascertained that it did not connect with the uterus. After separating some lateral adhesions with the

fingers and scissors, the tumor was seized with the right hand and drawn out of the vagina. It was now found to be attached by a short pedicle to the lower wall of the urethra, immediately behind the vagina. The pedicle was cut off with the scissors, and the stump tied with a ligature, as the hemorrhage did not cease upon the application of the hot iron. Professor Rindfleisch declared the tumor to be an œdematous and very soft fibroid, without any suspicious contents.

WAGNER. Case of Ovariectomy. Death. *Berliner klin. Wochenschrift*, No. 5, 1869.

Dr. Wagner reported in the Medical Society of Königsberg a case of ovariectomy. The woman, aged forty-five years, otherwise healthy, had suffered from a unilocular serous cyst of the broad ligament, without any adhesions. She first noticed the tumor in November, 1867. Since May, 1868, the swelling increased rapidly, until, at the time of the operation, November, 1868, the abdomen measured 98 cms. in circumference. The cyst was removed from the abdomen without any difficulty; the pedicle was then transfixed, tied in two sections with a double strong silk ligature, and the empty sac cut off. No hemorrhage taking place, the pedicle was replaced, and the wound closed with deep and superficial sutures.

In the first few days after the operation, the patient seemed to do well. Soon, however, signs of septicæmia appeared, and death ensued after five days. The post-mortem examination showed an extravasation of blood of the size of a walnut near the cut surface of the pedicle, while the central vessels of the pedicle were still open. Dr. W. ascribes death to the decomposition of this extravasated blood, which took place after the shock caused by the anæsthetic and the operation had passed off, the ligatures being unable to keep the central vessels of the pedicle sufficiently closed.

HERZFELD. Case of Atresia Vaginæ and Pregnancy. *Wiener Med. Presse*. 1868. No. 34.

A woman, forty-four years of age, was married for twenty-four years without ever having had any children. She menstruated regularly till June 18th, 1867, when the menses appeared for the last time. Neither a midwife, called on April 22d, 1868, nor Dr. H., could ascertain the presence of the portio vaginalis. The sounds of the foetal heart were heard feebly. The speculum showed a blind termination of the vaginal canal, which resembled in structure a shining cicatrix. After fourteen

days, labor pains began; the speculum now revealed a small opening at the end of the vaginal cul-de-sac, which the approaching head extended. The fresh membrane was finally torn with the finger, but it enclosed the head so tightly that the application of the forceps became necessary, by the aid of which a weak child was delivered, which died in eighteen days.

No cause could be found for the atresia.

M. LOEWY. Remarkable case of Amenorrhœa. (*Wiener Med. Wochenschrift*, xviii., 33, 1868.

An apparently healthy woman, 31 years of age, married for 11 years, has, up to the present time, passed through six normal confinements, in neither of which the usual loss of blood or lochial flow took place. *This woman had never yet menstruated* until after weaning her last child, when the catamenia appeared for the *first time* in her life, and reappeared after four weeks.

The only sign of conception was the nausea and vomiting, constantly occurring in the first few weeks.

PRURITUS of Pregnancy cured immediately by the Use of Tobacco. (*Tribune Médicale*, January 31st, 1869; *Wiener Med. Wochenschrift*, No. 22, 1869.

Mrs. W., a woman of nervous temperament, became pregnant a few months after her marriage. In addition to the usual derangement of the alimentary canal, she soon experienced a severe itching all over her body. The skin was of a perfectly normal appearance; the pruritus, however, caused her great excitement and soon produced nervous spasms. For several weeks every possible external and internal remedy was used in vain. A decoction of walnut-leaves gave her some relief when in the seventh month of pregnancy. Then a violent pyrosis and neuralgia of the dental nerves supervened. In order to alleviate the latter, she was advised by her husband to try the effect of smoking, when the pain as well as the itching and pyrosis disappeared immediately. Mrs. W. smoked one cigar every evening until she was prematurely delivered by a fright, after 8½ months.

Fourteen months afterwards Mrs. W. again became pregnant, and was again affected, in the fourth month of pregnancy, with pruritus followed by pyrosis. She did not immediately resort to smoking, from dislike of this habit, until the evil increased, when the smoking of one cigar again rendered her perfectly comfortable. She was this time also delivered prematurely in the seventh month, without any known cause to account for it.

E. MARTIN. Extirpation of both Ovaries. Death. *Monatsschr. f. Geburtsh. u. Frauenkr. B. xxxiii. H. 3.*

Mrs. B., 43 years of age, consulted Dr. M. on account of a rapidly increasing extension of the abdomen in August, 1868. Menstruated first in her 14th year. Was married from May, 1846, to January, 1848, without having any children. Married again in the summer of 1851. Is now the mother of five children, the last of which was born four years ago. Patient has for the last six years suffered from violent attacks of colic. No other morbid symptoms were observed except a frequent desire to empty the bladder.

A tumor was discovered for the first time on the left side of the abdomen. Neither pain nor weakness of the legs occurred, nor oedema of the feet. There was no swelling of the breasts nor nausea. Defecation was only possible after the use of laxatives.

The tumor, formerly of the size of an apple, occupied now the whole abdominal cavity, rendering respiration difficult. Costiveness and tenesmus of the bladder had also increased. Her abdomen measured now 110 ctm. Palpation showed the existence of two distinct tumors; one anterior, less movable, extending from the pubes to the navel; the other posterior and to the right of the former, smooth and resistant, extending to the epigastric region. An examination per vaginam revealed the portio vaginalis higher than usual, and behind it a smooth elastic swelling, which was also felt through the rectum. On introducing the sound the uterus was found to be considerably enlarged.

On August 5th paracentesis abdominis was made in the linea alba, and eleven pounds of a thick grayish-brown liquid emptied, followed by a diminution of the anterior tumor, without causing, however, a sinking down of the posterior swelling.

On October 5th patient returned, with the request to have a radical operation performed. Her general health being good, the operation was performed on October 16th. After the patient was brought under the influence of chloroform, an incision through the linea alba laid open the anterior cyst, belonging to the left ovary, which was turned anteriorly and to the right side. After separating the pretty extensive adhesions the contents of the cyst, amounting to about four pounds, were emptied, and the cyst walls pulled out of the opening, which caused the appearance of several smaller cysts, which, connected intimately with the emptied cyst, were found to arise from a very vascular pedicle, situated in front of the left swollen tube. The pedicle was compressed by Kœberle's constricting apparatus, and then removed with the knife.

The smooth whitish cyst of the right ovary, having the size of a man's head, was now emptied, which, however, was not followed by a corresponding collapse. On passing the hand above the cyst into the abdominal cavity, extensive adhesions were found to exist between the cyst-walls, portions of the intestine, and the mesentery, by means of very vascular pseudo-membranes. The latter were seized with the clamp, compressed, and cut away, followed by the application of the hot iron to the bleeding surface, which had to be repeated after the clamp was removed. On pulling the cyst-walls out through the wound, another extensive adhesion was found in Douglas' cul-de-sac, involving the posterior surface of the cervix and rectum, while the elongated right tube was seen to pass round the posterior surface of the cyst. These adhesions being too extensive and vascular, they were compressed by a wire loop, and, after removing the free portions of the cyst, fixed in the abdominal wound. A clamp was applied to the thick vascular pedicle. The hot iron was then again applied to the pedicle of the left cyst, previous to its being replaced in the pelvic cavity. The wound was closed by seven deep and six superficial sutures, and the remaining portion of the right cyst fixed in the abdominal wall by two needles. The operation had lasted 1½ hours.

Two hours after the operation the pulse rose to 120; she also complained of nausea and cold extremities. In the evening severe vomiting set in, causing considerable hemorrhage from the pedicle. In spite of the remedies employed, the vomiting continued till she died, October 20th, at 7 A.M.

The post-mortem examination showed an enlargement of the gall-bladder, which contained 30-40 gall-stones, some as large as a hazel-nut. The ductus choledochus was broad enough to admit two fingers, containing a gall-stone of the size of a pigeon's egg. The uterus was twisted towards the right side, its anterior surface facing the right side of the pelvis. Its length was 10½ ctm., the cervix alone measuring 5 ctm. The peritoneal lining of the uterus and uterine appendages was covered with small patches of exudation.

II.

Lead Poisoning a Cause of Vaginitis.

ATTENTION has of late been much drawn to the subject of vaginitis, and particularly on account of the surgical treatment inflicted upon the women suffering from this affection, and which is recommended as the only cure in such cases. The attention

of the medical profession, almost dormant upon this subject since the time of Michon, was all at once attracted thereto by the recital of the cruel mutilations to which Dr. Marion Sims and several of his followers submitted the victims of this singular disease. The treatment of this fortunately very rare affection, as practised by the above very bold American gynecologist, has found but few advocates among us, and its further practice will not be encouraged by the ætiology of the disease which comes to us from the native country of Dr. Sims.

Dr. Neffel of New York relates three cases of intense vaginitis occurring in women of high social position, in one of whom, on account of the aggravated form of the disease, sexual intercourse had become impossible, coincident with a saturnine intoxication, resulting from the prolonged use of a cosmetic containing lead. The intoxication manifested itself by paralysis and atrophy of the extensors, so that the patients were unable to extend their hands, fingers, or thumbs, while the supinator muscles, as well as the deltoid, biceps, and triceps, were in a normal state. The electro-muscular contractility and sensibility were very much diminished, if not entirely abolished. Two of the patients were cured by the internal use of the iodide of potassium and sulphur, and without having employed any local means for the vaginitis. It disappeared at the same time with the paralysis, so that the married woman who had hitherto been sterile, and had for that cause consulted Dr. Marion Sims, has since become a mother.—*L'Union Médicale*, No. 19, 1869.

III.

Narrowing the Vagina for Relief of Prolapsus Uteri.

MECHANICAL means in the treatment of prolapse of the uterus having been proved in many cases to be inefficient, various surgical expedients have been resorted to, to effect a cure by narrowing the circumference of the vaginal canal, and thus permanently relieve the victims of this infirmity. For this purpose some, as M. Delore in Lyons, have caught together the mucous membrane by means of a pair of forceps especially adapted to that end; others have scored the mucous membrane with the actual or other cauteries, and finally Velpeau resected a tongue-shaped piece of the mucous membrane, and then united the borders of the fold by means of ligatures. It is a modification of this last mode of operating, already performed several times by M. Lane, that Mr. Norton has resorted to with success in the St. Mary's Hospital in London, in the case of a milkwoman, who had suffered

seventeen years from prolapse of the uterus of so marked a degree that she could no longer work. An elliptical portion of the vesico-vaginal mucous membrane, $8\frac{1}{2}$ inches long by 2 broad, was resected, and the borders of this fold united at ten points with metallic sutures. As soon as these had come away and union had been obtained, that is, after 14 days, Mr. Norton resected, by a horse-shoe incision, more than half an inch of the mucous surface of the posterior and lateral walls of the vagina, including the cutaneous borders of the fourchette. The denuded surfaces were then approximated, as in rupture of the perinæum, and kept in apposition by means of twisted metallic sutures. Other and deeper sutures controlled the pouting lips of the fold. The first sutures when removed, after forty-eight hours, gave exit to a few drops of pus, and there was slight engorgement and induration of the compromised tissues, which soon disappeared, and on the removal of the second sutures, on the seventh day, the cure was complete, and remains such more than eighteen months after the operation. (*Lancet*, 23d January.) It will be noticed that the hemorrhage which in this operation is to be apprehended is not spoken of. Prevent this complication, and the problem of the cure of prolapse of the uterus is solved.—*L'Union Médicale*, No. 19, 1869.

IV.

Clinical Researches upon the Direction of the Axis of the Uterus in the Adult Female. By M. PANAS, Surgeon to the Hospital Saint-Luis.

RELYING upon his own investigations, continued during two years in the hospital of Lourcine, which are based upon an aggregate of 114 cases, M. Panas draws the following conclusions:

Anteflexion, of different degrees, constitutes in one-third of the cases the physiological state of the uterus. The straight uterus, that is, one whose axis is perpendicular to the plane of the superior strait of the pelvis, and considered until recently the only physiological one, occurs in not quite one-half the cases.

Of all the changes in the position, or the direction of the uterus, those in a posterior direction (retroversion or retroflexion) are the least frequent, and consequently more strictly pathological than anteflexions.

Very probably, at the age of puberty the uterus has a tendency to rectify any malposition; at least such is the case according to statistics, which prove the average age of the cases of anteflexions to be less than that of the cases of straight uterus.

Early menstruation coincides with flexions, while tardy menstruation is noticed in the cases of straight uterus.

As a general rule, menstruation is more irregular in cases where there are uterine deviations, than when the uterus is straight.

Occupation does not seem to exert any influence upon the direction of the uterus.

Finally, the flexions and inclinations of the uterus which may be called physiological, present this feature, that in more than half the cases they are but slightly pronounced.—*L'Union Médicale*, No. 14, 1869.

II.

PREGNANCY, LABOR, PUERPERAL STATE.

I.

Concerning the Obstetrical Properties of Ergot of Rye.

M. AMEVILLE presented the following case, which gave rise to a discussion upon the properties of the ergot of rye, in the Société Medico-Pratique de Paris:

On the 24th of last May, I was called by a midwife to see a lady, thirty years of age, large, strong, and a primipara. Two hours after the child was delivered, the placenta not having come away, the midwife had administered some ergot of rye; but instead of producing thereby the expulsive pains she had expected, the uterine contractions confined themselves to the muscular fibres of the neck, which closed completely. When I arrived the child had been delivered about five hours. The os would admit only with difficulty the end of the finger; the introduction of the hand to reach the placenta was not to be thought of. Both the midwife and family were greatly alarmed, because from time to time there were slight discharges of blood; and the midwife, fearing a hemorrhage, did not dare leave the patient. Having in the first place reassured their minds, I ordered that an injection of tepid water be made upon the neck of the uterus for eight or ten minutes, and that this be repeated if necessary at the end of an hour. I returned two hours after and found that the spasm of the neck had almost entirely yielded, and that the os was supple and sufficiently dilated to admit the end of the hand shaped into a cone. I therefore gradually produced complete dilatation, and having introduced the hand and detached the placenta, which was still adherent at one of its edges, I completed the labor.

I cite this case, to demonstrate to you once more the impropriety of administering ergot of rye in certain circumstances, in

which, on the contrary, direct intervention should be resorted to; and also how its administration may hinder, at least momentarily, the performance of the necessary procedure; and again, to show the influence of tepid injections upon dilatation of the os.—*L'Union Médicale*, No. 24, 1869.

II.

New Symptoms of Rupture of Uterus—Continuance of Contractions.

It is generally admitted by modern authorities, especially in France, that the cessation of uterine contractions is a characteristic symptom, an almost pathognomonic sign of rupture of the uterus occurring during parturition. M. Jolly, having observed the contrary in two cases during his service at the Maternité in Paris in 1867, was induced to inquire into the frequency and causes of this unusual continuance of the contractions, and of their force and regularity. Now, it results from these inquiries and researches that this continuance of contractions, unusual as it may seem, is nevertheless of pretty frequent occurrence; and notwithstanding the absence in many cases of details upon this subject, and the lack of precision as to the time when the rupture occurred, and subtracting all those cases in which it was situated in the intra-vaginal portion of the neck and those cases in which it was produced by an obstetrical operation, the author succeeded in collecting twenty-three recorded cases, six of which he gathered at the Maternité, and seventeen from authors, all of which he reports in extenso. Bearing in mind the experience and opinion of such authors, we have here a new fact presented and one worthy of record; for the continuance of the contractions remaining unknown, obscures necessarily the diagnosis of so severe a lesion, and by giving the obstetrician a false feeling of security, can retard the employment of means to ward off the fatal issue, viz., the immediate extraction of the child and its appendages; but, it must be borne in mind that if continuance of the contractions with rupture of the uterus really does obtain, as well-authenticated facts prove, it does so only as an infinitely rare exception, the frequency of which, even the statistics of the author, notwithstanding his eliminations, fail to give, as some of his selected cases have upon this point no weight whatever. Such is for instance his Case No. VII., at the Maternité, which the remarks of M. Jolly clearly show to have been a case of perforation by a splinter of bone during the operation of cephalotripsy, a subject entirely foreign to his thesis. Case No. VIII. is likewise of no weight, by reason of lack of details and because

it was one in which cephalotripsy was performed. In Case No. IX., it was after a blunt hook had been used to perforate the head that the woman was seized with a very violent pain, having the character of a cramp, and accompanied by the distressing cry of "Oh! my belly; such dreadful pain!" The uterine contractions then ceased, and did not return until later. In Case No. X., gathered from the *Maternité*, a circular perforation, with torn and contused edges, involving the whole thickness of the uterine tissue and the peritonæum, and having the circumference of a fifty-centimes piece, had evidently been produced by the finger in performing version; there was also another rupture; both of them were confined to the neck of the uterus. In carefully examining these cases, we find in most of them motives for their exclusion by reason of lack of details, as for example in Case No. XIV., or other reasons which considerably lessen their value in that special point of view from which the author regards them. There is as marked a difference between a case of continuance of the contractions where the perforation is limited in extent and of accidental occurrence, and a case in which the rupture is spontaneous and extensive, as between a case of rupture of the fundus and one of rupture of the cervix. It is no rare occurrence, says Robert Collin, that the contractions continue in cases of slight rupture, and we find among the thirty-four cases recorded by him, four in which the children were born by the unaided efforts of nature. According to Ramsbotham, if an extensive rupture occurs at once, it is probable that contractions will cease immediately, but that they will continue for some time if the rupture be a small one, and will diminish gradually in proportion as the rupture increases in size. Finally, Bonnet says that if the rupture be of small extent, and is situated in the cervix, or if only a portion of the fibres or only the peritonæum be torn, the labor may go on uninterruptedly; Reynolds, Fleetwood Churchill, Tyler Smith, and others, make the same assertion. The seat of the rupture in the neck or inferior segment of the uterus, as obtained in most of his cases, seems to explain to the author the continuance of the contractions; but, in view of the established and recognized fact that in the great majority of cases that is the seat of election for a rupture, this explanation hardly holds good, unless the extent of the lesion be at the same time taken into account. (*Arch. de Méd.*, Septembre, Octobre, and Novembre.) As a result, then, of this diffuse and prolific work, we have nothing certain in regard to the frequency and causes of the continuance of the contractions in cases of uterine rupture. As is well known, obstetricians have for a long time been interested in this subject, and if the modern authorities in France have

not been as assiduous therein as those in other countries, it has been because there is no reason for their occupying themselves with such a rare exception in view of an almost absolute rule. The new symptom of rupture of the uterus is the only other point of this long dissertation which remains to be considered. In default of the sudden cessation of uterine contractions, which is the principal symptom, and bearing in mind that the hemorrhage and other symptoms may likewise be wanting, how are we to recognize a rupture of the uterus? A voluminous tumor just above the pubis, resembling the distended bladder but more clearly defined, appearing to be filled with a gelatinous mass, as observed by M. Jolly in the case of the woman Leveloppe admitted to the Maternité August 9th, 1867, seems to him to answer this question. Catheterism gave no urine, and the contractions being very strong and frequent, with energetic expulsive efforts without hemorrhage, nothing indicated a perforation or a rupture of the uterus, both of which probably then existed; and it was only after the performance of version and the extraction of a dead child, that the lesions became manifest. The autopsy verified a small circular perforation of the left side of the neck, just below the os internum, seemingly produced by a finger; also, a second rupture of larger extent, situated in the anterior wall of the neck at the same height, and having a transverse direction of five to six centimetres in length, opening into a large sub-peritoneal cavity which still contained black clots, and corresponding to the suprapubic tumor during life, which was accurately reproduced by stuffing this cavity with paper. This hypogastric tumor, by indicating a sub-peritoneal effusion of blood, would, in the absence of other symptoms, suffice to diagnose a perforation or a rupture of the anterior uterine wall, with limited separation of the peritonæum; but, McClintock has seen emphysema produce the same phenomenon in this region. It would therefore be necessary to recognize the differential qualities attaining to blood and gases. Moreover, both these may contribute to the formation of the tumor. Thus in the autopsy of his second case, M. Jolly found the uterus inclining to the right side with a voluminous tumor to its left, extending into the iliac fossa, and giving upon palpation the sensation of a bladder filled with air, and a gaseous crepitation. It was filled partially with black clots of blood, but for the most part with air, and disappeared as soon as a puncture allowed the latter to escape. It communicated with the uterine cavity, and was formed by the two folds of the broad ligament. The effusion was limited on one side by the insertion of the ligament into the pelvic wall; it had separated the peritonæum in all the inferior half of the anterior

face of the uterus, stopping at the median line. There was found upon the left side of the neck, a vertical rupture extending from the os internum to the junction of the neck with the vagina, in the space comprised between the separated folds of the ligament, and communicating freely with the above-mentioned tumor. Its existence might probably have been shown during life, before the tympanitic inflation which supervened soon after delivery. Hecker simultaneously confirms the value of this new symptom of a sub-peritonæal effusion of blood or gas in cases of uterine rupture, no matter at what point it obtain. Thus, he has verified its existence upon the anterior wall of the vagina in the form of a round, elastic, painless tumor, fluctuating and resembling a cystocele. The contractions were strong and regular, and there had only been one slight hemorrhage, with no other symptoms of rupture. Judging it at the time to be a sub-peritonæal effusion of blood, resulting from a partial rupture of the uterine tissue, he proceeded immediately to perform version, which allowed him to recognize very distinctly a rupture of the left side of the inferior segment of the uterus, communicating with a cavity. These lesions were not, however, confirmed after the death of the woman. We have here unquestionably a symptom of great value, and the existence of which explains, in a rational way, in cases of rupture of the uterine tissue alone with preservation of the peritonæum, that this tumor is found either in the hypogastric region, in the groin, or in the vagina. It has also the advantage of indicating the seat of the lesion, and of diagnosing its presence in the absence of hemorrhage, especially when accompanied by continuance of the uterine contractions. There is no doubt that having been thus demonstrated in France and in Germany, after having been so incidentally in Ireland, it will be much more frequently observed in the future.—*L'Union Médicale*, No. 18, 1869.

III.

On the Pulse of Parturient Women.

M. HEMRY, in his researches to verify the slowness of the pulse in parturient women, discovered that irregularity and inequality of the pulse were coincident, and even more frequent phenomena. Of 400 women observed in the Hospital Cochin, 64 presented slowness of the pulse in different degrees, while an alteration in its rhythm was noticed in 94. Slowness of the pulse in parturient women ceases when the milk-fever begins, whereas its irregularity and inequality continue in most cases until the tenth day. Agreeing with MM. Marcy and Blot, the

author attributes this slowness of the pulse to an increase of the arterial tension, caused by the sudden suppression of the uterine circulation; but the very exceptions in which this phenomenon does not obtain, forbid such an explanation; since were it the true one, every parturient woman should present slowness of the pulse. It seems to us to be rather due to the shock produced upon the system by the parturient act and of the consequent nervous depression, the intensity of which varies in different cases, as does the intensity of the milk-fever which causes it to cease. The occurrence of this phenomenon in several cases of miscarriage and at the very moment of the death of the foetus, cited as proofs in support of the first explanation, are not convincing, since the effects are the same, and it must be borne in mind that in the case of a dead foetus, whether it be expelled or no, the symptoms of milk-fever come on all the same. The influence of moral emotions in causing an increase in the frequency of the pulse is another argument in favor of this vital and organic explanation, rather than of the entirely mechanical one.—*Arch. de Méd.* ; Aofit.

IV.

On Casarean Section by Caustics.

THE substitution of Vienna paste for the bistoury, in the division of the abdominal parietes in a case of extra-uterine pregnancy, is too interesting a fact to be passed over in silence. It was done in America by a French surgeon, according to the *Philadelphia Med. and Surg. Reporter*, in the case of a woman at the sixth month of her pregnancy, when the dead foetus was found to be in the left Fallopian tube. The health of the patient was in such a critical state that any loss of blood might prove fatal. A large diachylon plaster, having in the centre an opening four inches in length by one in breadth, was put upon the prominent portion of the tumor, and a thick layer of Vienna paste applied in the fissure during three minutes. Violent pain resulted; but ten days after, the oblique muscles down to the fascia had been divided by the caustic, and one more application sufficed to penetrate into the cyst. The opening was enlarged with the forefinger and a normally developed foetus extracted. The adhesions along the lips of the wound were of so intimate a character that the cystic cavity could be injected without danger of peritonitis. The patient was kept quiet, suffered neither from pain nor fever, and in a few days healthy granulations appeared upon the sides of the wound, which cicatrized

promptly. Twelve hours later the patient was able to sit up in her bed, and might have been considered cured, when cholera, which had invaded the hospital, carried her off on the fifteenth day.

We have here a new encouragement to resort to a like mode of procedure in a similar case; for although it is not the first time in which caustics have been used in such cases, we have never known so successful a result. The use of an anæsthetic would facilitate the application.—*L'Union Médicale*, No. 19, 1869.

V.

On Stricture of the Internal Os as a Cause of Miscarriage.
By WILLIAM MARSHALL, M.D.

MRS. D., aged 30, a delicate woman, *five months* advanced in pregnancy, was taken with labor-pains about 6 o'clock one evening. I saw her at 8.30. The pains were strong and forcing, very similar in character to those which immediately precede the expulsion of the head in a primipara. I was told that when pregnant last, she had miscarried at the fifth month, and that the pains then for three hours had been very severe—much worse than she had ever had them in any confinement, and similar to what they were now. On examination, I found the os dilated to the size of a half-crown, and very soft. On passing my finger further up, in order to feel the fœtus, I found the canal of the cervix becoming decidedly narrower, when suddenly she cried out that I was hurting her and jerked herself away. On a second attempt the same thing was repeated; but on a third, being prepared for her moving, I ascertained that a tight resisting constriction existed at the internal os, which would not admit the tip of the finger. As soon as I touched the constricted part, she complained of a severe cutting pain; and on attempting to pass the finger through it, she became hysterical, and on my persisting, *perfectly maniacal*. On withdrawing my finger she immediately became rational, and complained of the agonizing pain I had caused her.

As she was quite positive that in her previous miscarriage she had suffered for three hours, as much as she was doing now, I waited for a couple of hours. During this time the pains were very strong, and the suffering greater than I had ever seen in any confinement. In order to make a thorough examination, I put her under chloroform. The external os was very soft and dilated, but at the internal os there existed a constriction which still readily allowed the finger to pass through, and which seemed now quite dilatable. The breech was presenting, and

I had no doubt that when a pain came it would be pushed through, and the whole thing soon be at an end. The pains, however, did not return as long as I kept her under chloroform, so that I was forced to discontinue it. The stricture returned with the first pain, firmly grasping the tip of my finger, which I had retained in the uterus. I now gave her a dose of ergot, and waited until one o'clock, when, finding that little or no progress had been made, I determined to notch the stricture in one or two places, under chloroform, as it was impossible to touch it without causing intense pain and bringing on a maniacal paroxysm. I went home for a probe-pointed bistoury, and on my return in half an hour, found the strictured part, with the breech forced into it, protruded through the external os, which was drawn up around it. After a few pains, the breech passed through the constriction; I pulled down the body, and finding that the head would not come, pushed my finger past it, hooked it over the crown, and pulled the head through the stricture. Without withdrawing my finger, I detached the placenta, and withdrew it and the finger at the same time. While doing all this, the patient was perfectly maniacal—she shrieked, kicked, struck, and bit at those around her. Immediately on withdrawing the finger she became rational, and apologized for what she had done; the agony had been so intense, she said, as to drive her for the time out of her senses. She recovered without a bad symptom.

To one interested in uterine pathology, this case is, I think, of considerable interest.

Firstly, With regard to the stricture itself, it is remarkable (1) that a stricture should have existed in such a spot; (2) that it should have been so exquisitely painful to the touch; (3) that the pain should have given rise to paroxysms of hysterical mania. May not some forms of puerperal mania depend upon a uterine lesion acting on an hysterical system?

Secondly, That the stricture was the cause of the miscarriage in this and the previous pregnancy, I have no doubt. I have never seen this mentioned as a cause of premature labor. The uterus, up to the fifth or sixth month of pregnancy, grows and expands almost entirely in its upper part. At that time it enlarges downwards from the internal os; but in this case the stricture would not allow it to expand, and by continued irritation induced labor pains.

Thirdly, If this be true, it throws some light upon "What is the cause of labor?"—a point, I believe, still undetermined. If you examine the uterus at the eighth month, you find a considerable portion of the neck still unexpanded; if you

examine at the end of the ninth month, you find the neck entirely obliterated. What happens then? Does the uterus stop growing? No; it still continues to enlarge downwards, and it can only do so by dilating the os. Had this stricture been situated at the external os, the uterus would have gone on growing until the end of the ninth month, and then, just as in this miscarriage, by irritation of the stricture, labor-pains would have set in. It is not necessary, however, to invoke the aid of a stricture at the internal os to induce labor-pains. The os is the most sensitive part of the whole organ, to dilate or irritate which is to bring on pains. This the natural growth of the uterus does; then, those contractions of the uterus, sometimes painful and sometimes painless, which occur every hour or two during the latter months of pregnancy, recur with greater frequency; the membranes and the head of the child are pushed down on the os, exciting it more and more to induce pains by reflex action, until finally the labor is accomplished. This I have long regarded as the explanation of the cause of labor: the natural expansion of the uterus, acting on the sensitive os, begins to dilate it and through it reflexly the necessary pains are called forth.—*Glasgow Medical and Surgical Journal*, Feb. 1869.

III.

DISEASES OF CHILDREN.

Synovial Apparatus of the New-Born. By DR. W. HEINEKE.

I.

IN the new-born the tendon sheaths are constant in their appearance, though variable in size; still they are fully developed. The synovial bursæ are not so constant. While the deeper-lying, near the origin and insertion of the muscles and tendons, are larger in all ages, their more considerable size is remarkable in the new-born. Many smaller and some of the larger bursæ are now and then wanting in childhood, but they regularly appear a little later.

Subcutaneous bursæ are only exceptionally found in the new-born, nor do they frequently appear in early youth; but the bursa-mucosa olecrani is, by exception, quite variable. Subcutaneous bursæ are found close under parts of the skin which

lie over superficial portions of the skeleton. They are occasionally found in unusual places, where pressure and friction of parts of the surface closely overlying bones, are produced by the peculiar business of the individual; so, too, over pathological bony projections, as where old luxations and fractures give rise to prominences, and bursæ have frequently been found in stumps of amputations.

Such bursæ, in unusual positions or over pathological prominences, are called accessory. The tendon-sheaths, then, and a few cutaneous bursæ are found at the time of birth, while many appear only in later periods of life; the subfascial, in the neighborhood of tendons and muscles, first; then the subcutaneous.

In consequence of the greater elasticity of the young subcutaneous connective tissue, the skin slides over bony projections pretty easily without the help of bursæ; in older individuals the stiffening tissues overriding such prominences begin to show small chasms, which grow larger and run together, and so is produced a considerable space, the wall of which becomes thickened by constant rubbing. The earlier or later origin of the bursæ stamps the character of the changes which the tissues undergo. The congenital bursæ have a closed serous cavity lined with an epithelium, as do those beginning in the earlier years, while the productive system is very active. Those, on the contrary, which later in life arise from widening of tissues in the connective tissue are surrounded by membranous tissue without epithelium, or remain merely a degree of hiatus. This sort of imperfect bursa is found generally subcutaneous, less frequently under the fascia: going to prove that the bursæ nearer the skin are of later origin than the subfascial, and observation seems to add that most of the subcutaneous bursæ perfect in older individuals, while the subfascial exist already in the young.

If it be allowed that very many bursæ owe their origin to the intertrition of parts, it gives color to the presumption that the bursæ which are perfect in the new-born, as well as the tendon-sheaths, are not organs originally laid down, but are caused by the intertrition of parts during intra-uterine life (Virchow, *die krankh. Geschwülste*. Berlin, 1863. Bd. I., p. 198). This hypothesis is not sustained by the observation that in the fœtus of seven months there are a number of bursæ and all the tendon-sheaths quite perfect. In reference to this point Heineke examined a fœtus of about twenty-eight weeks, and another of about twenty-four weeks. In both bodies there were all the tendon-sheaths and a number of deep-lying bursæ—quite as many as are found in the new-born.

Most of the existing bursæ and many of the tendon-sheaths

seemed proportionally larger, and their investing membrane was much more easily removed than is the case in later life. These observations seem to show that the tendon-sheaths and a number of deep-lying bursæ are, like the articulations, organs originally laid down. The bursæ in older foetuses are more constant, while in the younger they may perhaps be more numerous.

In many places where bursæ are to form, we find in the foetus, as in the new-born, a delicate mesh of connective tissue, which is easily broken down by a little handling, leaving a cavity which has all the general appearances of a bursa; and this analogy is the more striking if we make an incision from the spine of the tibia up to the border of the patella, through the skin and fascia, and slightly separate the cut edges. The fascia over the middle of the patella and in front of the lower part of the ligamentum patellæ retracts pretty far to both sides, as though we had cut through a bursa there. Intercommunication of bursæ or tendon-sheaths, or with neighboring joints, is seldom noticed in children, being usually the result of the disappearance of connective tissue in later life. A few bursæ and tendon-sheaths communicate with neighboring joints, as a rule, in early life; for instance, the tendon-sheaths of the long head of the biceps and the deep bursæ over the knee-joint.—*The Anatomy and Pathology of Bursæ Mucosæ and Tendon-Sheaths.* Erlangen, 1868.

II.

The Pathology of the Navel. (Mostly from Dr. A. WRANY'S excellent paper in the *Jahrbuch für Phys. und Path. des Ersten Kindesalters.* 1868.)

Many obscure points in umbilical pathology have been made more intelligible by the researches of Richet (*Arch. Gén. de Méd.*, 1856, Dec., p. 642, and continued 1857, Jan., p. 59), and to him we owe several definite descriptions of parts intimately related to the more common anomalies of the navel.

The fibrous contour of the umbilical orifice, its skeleton, offers a rather complicated ensemble of structures. Examined on its anterior face, after the skin and fascia superficialis have been removed, the annulus umbilicalis offers the appearance of an irregularly quadrilateral opening, formed by the interlacement of the abdominal aponeuroses upon the mesial line.

This interchange of fibres is effected by means of flattened and ribbon-like bundles, each of which receives by its two extremities the insertion of muscular fibres (Thompson: *Preparations deposited in the Museum of the Paris Faculty in 1838*).

Posteriorly, after lifting the peritonæum and its fibrous lining, the annulus is seen to be formed by two bundles of curvilinear fibres which combine to encircle the opening, the superior bundle skirting the upper margin, while the inferior borders the lower, interlacing at their extremities and becoming gradually lost in the posterior face of the adjacent aponeuroses. These semicircular bundles give to the opening an elevated margin, and seem superadded to the linea alba, properly called, though a more careful inspection shows that these bundles are a transformation of a peculiar fibrous material which is disposed circularly around the umbilical cord as it enters the abdomen. (*Richet, Traité pratique d'anatomie médico-chirurgicale*, 3d Ed., page 602.)

Having recognized the muscularity of the fibres encircling the external aspect of the ring, Thompson supposed them capable of exercising a constriction upon hernial protrusions at the umbilicus; but it is to be borne in mind that only the external bundles possess these muscular attachments, and that they are so intimately fused with the general aponeurotic neighboring structures as to lose their independent action. All efforts of these muscular planes, then, are expended upon the contour of the ring, without the ability to change its form.

In the adult the external remnant of the navel is represented by a wrinkled and depressed cicatrix, the papilla umbilicalis, at the bottom of which is the fibrous cord traversing the annulus. Near the depression the cutis is pretty firmly adherent to the fibrous ring, and here the panniculus adiposus of the abdomen is interrupted. The fibrous cord still exhibits the elements of those parts which in the intra-uterine life of the fetus established the vascular relation between it and the mother, and these parts were essentially three—the vein superiorly and the two arteries inferiorly, to which was added in the embryonic life the urachus.

The vein, now become the ligamentum teres, and included in the free rim of the lig. triangulare, was accompanied by the accessory portal vein (Sappey), which anastomosed with the internal mammary and epigastric veins on the one hand, and with the portal on the other.

From below, the three lig. vesicæ, the middle, the urachus, and the two lateral, the remnants of the hypogastric or umbilical arteries, accompanied by arterial and venous branches which are connected with the epigastric and anterior vesical, and which anastomose partly with the cutaneous vessels of the umbilical region, and partly with the above-mentioned portal branches, run to the navel to assist the vein in forming the quadruple attachment of the papilla to the subjacent parts.

In the adult the urachus scarcely reaches the navel, but is either merged into one or the other lateral cord, lost in the linea alba, or insensibly converted by a band intermediate to the lateral cords. (C. Robin, *Note sur les ligamens qui succèdent à l'ouraque*.—*Gaz. Méd.*, 1860, No. 48, p. 754.)

Blandin and Velpeau long ago observed that the superior section of the lumen of the annulus umb. was more free than the portions below, in consequence of the slighter adhesion of the vein to the superior rim, while inferiorly the cicatricial elements are quite firmly blended with the annular periphery. Indeed, there is described an intermediate band, embracing the arterial cords and urachus, and inserted partly into the lower rim of the annulus, and partly into the cicatricial skin beyond, thus assisting principally in the drawing-in of the papilla. (Luschka, *Anat. des menschl. Bauches*, 1863, p. 25 et seq.)

If the four elements which traverse the umbilicus may be regarded as so many forces pulling it inward, three of them draw downward, and only one upward, a disposition which may easily explain the slight attachment of the vein to the superior rim of the unyielding aponeurotic ring. The pelvis, the abdominal walls, and the lower contents of the sub-diaphragmatic cavity increase rapidly with age; the umbilical arteries and urachus, being fibrous and only slightly extensible, do not follow this rapid increase, but rather remain proportionably too short, and exercise upon their upper points of attachment a continued traction, from which in good part the tilting inward and downward of papilla. The vein, on the contrary, but slightly drawn upon by the liver, which decreases rather than increases in size for a period, is still intimately adherent to the lower cords, and can obtain only a precarious attachment to the upper margin while thus continually solicited downwards.

The skin of the umbilical region adheres intimately to the cicatricial fibrous nucleus, and the fibres of the dermis are inextricably entangled with it; and these adhesions are so solid that powerful traction is resisted, the immense accumulations of fat sometimes found in the abdominal wall must leave the navel at the bottom of a deep pit, and even the fascia superficialis disappears between the tegumentary and subjacent cicatricial layers.

On the posterior aspect of this region the thin and transparent peritonæum is slightly raised by the urachus and umbilical arteries, while the vein detaches it considerably from the abdominal wall, and becomes enveloped in a triangular fold called the *falx* of the umbilical vein, which is directed obliquely upward, and to the right on its way to the inferior surface of the liver. Hence

it results that the peritonæum above the ring is detached from the abdominal wall, leaving a considerable space; while below, it is pretty closely adherent, though separable by the handle of the scalpel.

Opposite the umbilicus its degree of adherence varies considerably in different subjects, though generally it is not difficult to separate the serous tissue from the fibrous parts.

In the vicinity of the ring the peritonæum is re-enforced by a thin fibrous lining, quite analogous to the fibrous lining of the peritonæum in the inguinal region, where it is called fascia transversalis (Sir A. Cooper). The fibrous re-enforcement of the peritonæum in the umbilical region, seem to play a similar part in relation to the umbilical passage which the fascia transversalis of Cooper sustains to the inguinal passage, and is therefore figured and described by Richet as the fascia transversalis umbilicalis, for shortness, fascia umbilicalis.

This fascia presents marked differences of extent and thickness, and in some cases, especially in multiparous adults, is so imperceptible as to have escaped Velpeau and Malgaigne; though if it be so apparent in some muscular subjects as Richet would lead us to believe, it is difficult to see how such careful students as Blandin (*Traité d'anatomie topographique*) and Thompson could have missed it.

Destined to protect the umbilical vein as it enters the ring, this fascia re-enforces the superior part of the orifice at a place where hardly more than a pellet of fat would otherwise be found between the peritonæum and the anterior aspect of the ring. On each side of the ridge formed by this fascia over the vein there are often meshes or vacancies through which the transparency of the serous layer permits one to see the subjacent yellowish fat. These vacancies are principal factors in some cases of hernia.

Under the name of umbilical groove Richet has described the space comprised between the linea alba in front, the internal margins of the rectus muscles at the sides, and the fascia umbilicalis behind, a groove or passage into which the vein, accompanied by a considerable quantity of fatty cellular tissue, enters about an inch and a half to two inches above the annulus. The canal abruptly terminates at the annulus by adhesion of the fascia umb. to the site of junction of the three vessels, so that, although the fascia sends down a thin expansion to cover the upper ends of the arteries and urachus, there is for them no similar groove; they are closely glued to the aponeurotic wall, covered frequently only by the peritonæum. Nor is there the same adaptation of the linea alba to the formation of such a

groove, for just below the annulus the rectus muscles come together so nearly that the linea alba itself is almost abolished.

It was said in the early part of this paper that the posterior contour of the annulus umb. was furnished with a circumferential rim of tissue which appeared as two semicircular bands interlacing at the sides, raised above the general surface, and seemingly no part of the aponeurotic framework of the opening.

If the posterior aspect of the umbilicus be dissected in a subject dead a few days after birth, after lifting the peritonæum, and what may be of the fascia umb., this rim is seen to be composed of pale fibres having the appearance of the organic muscular fibres, of the intestine for example, or the middle coat of an artery, or the dartos; and it is to this sort of sphincter muscle that the initial stage of cicatrization is awarded. To the presence of this band is owing the constancy of the point of separation of the funis whether the ligature be high or low, or not at all, and gives a deep meaning to the remark of Sir A. Cooper, that if the umbilicus were lower on the abdomen no child would escape umbilical hernia.

The steps, then, *de visu*, of the formation of the umbilicus seem to be, a shrinking of the supplemental posterior contractile ring, a local inflammatory action sealing the vessels and gluing together the skin and their extremities, the fascia umbilicalis seizing upon the posterior aspect of the knot between the vein and the arteries, the tolerably firm adhesion of the arteries and urachus to the inferior rim of the annulus umb., accompanied by a persuasion of the vein away from the superior rim, aggravated by the more rapid development of the lower abdominal parts and traction upon the fore-shortened arterial cords.

The minute changes which precede and lay the way for those just rapidly enumerated, and which explain some congenital anomalies of the umbilicus, have been studied by Kölliker. (*Entwicklungs Geschichte des Menschen.* 1861.)

In addition to the parts already mentioned, the umbilical ring gives passage, in earlier foetal life, to the pedicle of the umbilical vesicle with its vasa omphalo-mesenterica, besides containing a portion of intestine which should by and by retreat into the abdominal cavity. When the pedicle and its vessels disappear and the intestine retracts, there is left only the urachus and umbilical vessels plunged in the peculiar material called the gelatine of Wharton.

The position of the navel in respect to the middle point of the body, though not necessarily a pathological datum, is still of some histological import, and is not invariable. (Casper, *Handb. der gerichtl. Med.* Devergie, *Médecine légale*,

tom. 1, p. 257 et seq. Hecker, Monatschft. f. Geburtsk, xxxi., p. 194.)

The highest degree of defective development of the navel is fissure of the abdominal wall accompanied by fissure of the chest (thoraco-gastroschisis). The fissure of the abdomen alone (gastroschisis) may reach from the xiphoid cartilage to the symphysis pubis, or even through it.

The abdominal walls, becoming narrower from the middle line of the back and thinner, are gradually merged into the amnios, which, either alone or with the thin parietal layer of the peritonæum, is the only covering of the intestinal mass.

The cord is either entirely absent, the placenta lying on the surface of the sac, and the umbilical vessels running under the amnion to their respective places—or very short. (Förster, Missbildungen. 1861. p. 109.)

The fissure appears in combination with eventration and numerous other defects, such as ectopia vesicæ (Holmes, Surgery of Children's Diseases), cloaca, incomplete formation of external genitals, hydrencephalocele, spina bifida, spinal curvature, anomalies of the heart, etc. And there is often an incomplete closure of the intestinal tube, allowing it to open freely into the sac.

It is seldom the case that the fissure is not in the middle line, but rather to one side.

In such case there is defect of the breast and pelvic walls or lower extremities of that side, with anomalies of the umbilical vessels, and generally defects of the genitals. The prognosis in such cases is necessarily fatal.

As causes of these malformations are anomalies of the amnion, especially unusual shortness and synechy of amnion and embryo, whereby the abdominal walls are stretched and drawn asunder. Dareste (Compt. rend., tom. 55) succeeded in producing a similar fissure in a chicken by artificial disturbance of the amnion. It is possible that the normal union of the abdominal walls may be prevented by the unusual size of the intestine.

III.

Hernia funiculi umbilicalis (Schistokoilon).

HERNIA of the navel depends essentially upon a deficiency or imperfect closure of the ring, which at the fifth to the eighth week normally contains a portion of intestine; if the regular shortening of the mesenterium and suspensory ligament does not occur to retract the intestine into the abdominal cavity, such

a persistence in the lumen of the annulus may, to some or greater degree, hinder the closure of the abdominal fissure (Thudicum). Such persistence, intestinal umbilical hernia, sometimes occasions serious accidents by being implicated in ligation of the funis, as has been three times seen by Labatier and several times by Dupuytren (Barret, Thèse, 1838, No. 162).

There appears at the navel a swelling of variable size and form, sometimes a mere thickening of the navel-string at its foetal end, and in other cases of a higher degree there is an oblong, conical, or hemispherical swelling, sometimes with a wide base, and again with a somewhat contracted neck (Förster).

The hernia may be so considerable that the tumor falls to the symphysis or even to the knees of the child, and there may be eventration.

Sometimes the cord comes from the middle of the swelling, but often from some point of its periphery. In the fresh state the walls of the tumor are smooth and glistening, and generally so thin that the intestines shine through; they consist of the amniotic cover of the cord, which at the base of the tumor fades into the skin of the abdomen, a layer of connective tissue (*fascia transversa*), which is often confounded with the brawny material of the cord (Wharton), the parietal layer of peritonæum, and a contribution from the aponeurosis of the abdominal muscles (Vid. J. Moore, Schweiz. Zeitschft. f. Heilk. ii., 1863, p. 256). In the layer of connective tissue run the umbilical vessels, generally separated quite to their point of insertion, and thrust to one side—usually the left.

The skin frequently forms circular rings around the base of the swelling, in consequence of the puckering in of a puffy fold, which sometimes continues as a broad band along the cord.

In the highest degree of this defect the contents of the tumor may comprise a great part of the intestines, sometimes the displaced liver (Neugebauer, N. Zeitschft. f. Geburtskunde, tom. xxvii., i., 1849), and even the stomach and other abdominal organs.

In slight forms of umbilical hernia only a portion of the intestinal canal, with, may be, a part of the liver, forms a pediculated tumor at the ring; occasionally the loop of intestine has been retracted into the abdomen, leaving only the liver in the sac, or a single loop or diverticulum of intestine.

In thirty-seven cases reported by Thudicum the hernial mass was intestines in twenty-two cases, intestines and liver in seven cases, liver alone in eight. Nor do we find in the hernia only these viscera which are normally partly supported by the umbilical region of the abdominal wall, and in such cases Thudicum

suggests that an accident—partly allowed by relaxation of the suspensory ligaments of the stomach and spleen, and a consequent hindrance to the retreat of the mesentery and intestines upon the mesogastrium—partly by entanglement of the stomach and spleen with the normally overlying parts.

Neugebauer considers the presence of the liver in a hernia funiculi as an original defect of development depending upon an ingenerate shortness of the space between the umbilical focus on the one hand, and the hepatic focus on the other hand, with a corresponding proximity of the duodenum to the abdominal fissure. In such case the loop of intestine may be gradually solicited in by its suspensory apparatus while the liver remains still in the fissure. Pseudo-membranous adhesions of the contents with the hernial sac happen occasionally, as, for instance, the peritonitis in such cases accompanying the shedding of the navel-string; or the intestinal loop may be attached to the sac with the remnant of the duct, omphalo-entericus.

If the hernial contents are reducible they may be returned either alone or with the sac; if not possible, the cause may be smallness of the hernial orifice, shortness of the normal connections of the hernial contents with the sac, membranous adhesions, or an abdominal cavity too small to contain the outlying intestines.

The preservation of life stands in close relation with the shedding of the cord; the subserous tissue may be exposed, or the discovered peritonæum may be subjected to a dangerous or even fatal inflammation, or the sphacelation of the umbilical tissues may expose and endanger the intestinal tissue.

The slighter forms of hernia funiculi may leave a permanent diastasis of the annulus umbilicalis.

Abdominal Fissure and Intestinal Diverticulum.

The earliest recognized defect of formation is a permanency of the normal communication between the intestine and yolk-sac (third week). The umbilicus is either not formed at all, and the ileum opens into a hernia of the cord, or the abdominal walls are closed up to the ring and the intestinal fistula opens at that point. The large intestine begins with an opening in the abdominal wall, continuous with the iliac fistula, or is merely a blind appendix to the ileum. As a rule, it is ill-developed and ends blindly below. Fissure of the bladder and formation of cloaca are frequent complications. (Förster, Würzb. Med. Zeitsch., iii., p. 205). Fissure of the intestine, with its accompanying anomalies of the large intestine, almost necessarily preclude viability.

If the yolk-canal does not disappear as usual, it becomes a more or less integral part of the ileum, to which it is joined at an acute angle as a branch having the same structural texture and similar calibre; sometimes the lumen of this branching appendix is much less than that of the axis ileum. It is sometimes found in a congenital hernia (Moore's case); but generally it is drawn back into the abdomen by the retreating intestine, where it becomes involved in the development of the umbilicus as a diverticulum umbicale, ending open-mouthed or blindly in the posterior wall. (Gesenius, Journ. f. Kinderhk., tom. xxx., 1858, p. 56.)

The open intestinal diverticulum is characterized by the symptoms of intestinal fistula after the falling of the cord; the middle of the umbilicus is occupied by an opening surrounded by a rim of red tissue, and the action of the abdominal muscles protrudes a swollen perforated ring of mucous membrane with which exudes a portion of chyme—or the exsudation may be a variable quantity of intestinal mucus.

In this case, too, the large intestine may be a mere blind appendage to the ileum, or conduct itself normally—a matter of great moment in the prognosis; for in the former case life is impossible, while otherwise it will depend upon how much of the intestinal contents runs off through the fistula, and how much follows the usual route to the colon.

Sometimes the fistula closes spontaneously, if the outflow be inconsiderable or presently cease, while in other cases the diverticulum prolapses with the circumjacent skin and forms a glistening red cone, several inches in length perhaps, with its peak in the annulus and its base perforated by the lumen of the tube. (Cazin, Arch. Gén. de Méd., 1868, Avril, p. 475.)

If the tumor become too large for return, the swelling goes on, external influences giving speedy rise to the appearance of strangulation with its dangerous consequences, gangrene, peritonitis, etc.

Nor is this accident unattended with danger, for a portion of the small intestine may also be pulled out and death result from its impermeability. And with the open intestinal diverticulum are often associated vesical fissure, cloaca, harelip, cleft palate, spina bifida, etc.

Meckel's diverticulum may reach 1-10" in length, and either end blindly at the umbilicus or remain a solid, vascular (vasa omphalo-enterica), pigmented cord bound up with the funis; or it may hang free in the abdominal cavity, or be found among the contents of a hernial sac.

The vascular cord may exist without any diverticulum, or with only a slight pouting of its intestinal attachment (Roki-

tansky). This incipient diverticulum may cling to the annulus (Eschricht, Müller's Archiv, 1884, p. 222; Gruber, Petersb. Med. Ztschrft., 1861, Tom. i., p. 34), or contract pseudo-adhesions with neighboring crops of intestines or the abdominal wall, and this give rise to strangulation of the intestines. (Duchek, Wochenbl. d. Ztschrft. k. k. Ges. der Aerzte zu Wien. 1862. Nr. 40. Vogel, Arch. d. Vereins. f. wis. Heilk. i. 1864. p. 223.)

Uracho-Umbilical Fistula; Fissured Bladder.

In the highest degree of abdomino-vesical fissure there is usually association of thoraco-gastric or simple gastroschisis (Mec- kel, Path. Anat. Förster), the umbilicus considerably nearer the pubis than normal, and its vessels running in and out with unusual relations; and the urachus is absent. The posterior wall of the bladder is pushed forward by the subjacent intestines, and its reddened, tumid, mucous surface swells out of the fissure, exhibiting the mouths of the ureters at its lower part.

Combined with this anomaly, which does not of itself prognosticate fatally, we find fissure of the pubis, defects of the bones near the symphysis, epispadia, and diminutiveness of the penis in the male, absence of the urethra and absence or fissure of the clitoris in the female, defects of the internal genitalia in both sexes, cloaca, atresia of the rectum, hydrancephalocele, spina bifida, and other anomalies.

In Paget's case (Med. Chir. Trans., xlv.) the fissure was limited to the immediate vicinity of the umbilicus; only a small part of the vesical mucous lining came through the abdominal hiatus, and acted as a tampon to the opening.

Contraction of the bladder drew inwards the protruding parts, and the urine flowed through the normal urethra; but a vigorous exercise of the muscular apparatus could spurt a little of the urine through the umbilical opening.

In another case (Froriep, Chir. Kupfertaf., T. 840) the fissure was longer, the posterior vesical wall bulged out, and the urine trickled over the surface from the exposed ureters; while the external genitals and the urethra were well-formed.

The case operated upon by Mr. T. Holmes, with some success, is figured and described in his "Surgical Diseases of Children" (p. 150 et seq.).

Patency of the urachus belongs among the slighter cases. This canal is generally obliterated by the end of the first half of pregnancy, but even at birth the lower or vesical end is open for a little way as a conical or cylindrical extension of the vesical

walls, upon which the organic muscular layer is prolonged by a few longitudinal fibres. The upper part of the urachus then appears as a thick, fibrous, cylindrical string of tissue, loosely connected with the umbilical arteries at the annulus. Yet portions of this apparently solid cord may still be bored out by here and there short remnants of the original canal, while the lower end has a minute communication with the bladder (Luschka, *Virch. Arch.*, Tom. xxiii., p. 1).

A considerable length of the urachus canal may remain patent, but involution seldom fails so completely as not to close the umbilical extremity. It may form at the umbilicus a nipple-shaped projection (Starr, *Lond. Med. Gazette*, 1844, Jan.), or like a glans penis (Meyer, *Casper's Wochenschrift*, 1844) with a fine opening at the extremity.

Seldom is the opening more than sufficient to allow the introduction of a medium-sized sound; yet it may even admit a finger in some cases.

Bryant (*Med. Times and Gazette*, May 3, 1862) reports a case of patent urachus in a boy eight years old (*Vid. Boyer, Traité des maladies chir.*, 1821, Tom. vii., p. 540, Tom. ix., p. 46).

The fistulous opening is generally surrounded by a zone of inflamed and excoriated tissue. Near the bladder the canal of such a patent urachus is generally wider than towards the umbilical extremity.

The cause of this disturbance of involution is sometimes stenosis or atresia of the normal urethra or neck of the bladder, and all the urine must overflow at the fistulous exit. In other cases the urethra and genitalia are normal, and the urine is forced to seek the fistulous outlet in consequence of an obstruction in its normal passage. Hyrtl observed a case where an otherwise perfectly sound young man could eject urine through his uracho-umbilical fistula by suddenly holding in the normal urethral current during micturition. In a case where the urachus is closed only at its umbilical extremity it may happen that a *retentio urinæ*, as from vesical calculus, for instance (Fantoni), dilates its calibre to such a degree as to pull open the sealed mouth of the tube.

Amniotic Umbilicus (Widerhofer).

The appearance of a hernia funiculi may be assumed by the amniotic sheath of the cord spreading out into a wide funnel-shaped mass, so that the line of demarcation between the abdominal skin and the amniotic sheath of the funis, instead of being a small circle at the somewhat constricted root of a slen-

der and rather flattened cord, is at the periphery of the base of a wide cone. Widerhofer (Jahrb. f. Kinderheilk., 1862, p. 186) observed a case in which the diameter of the outspread insertion was about two and one-half inches.

In this case the annulus seems to have been normal in size and properly fenced in by the muscular aponeuroses, which, instead of being covered by skin up to the margin of the ring, had to be content with the loose covering afforded by the outspread amniotic sheath.

Widerhofer reckons the frequency of such cases as one out of every two thousand children; and the prognoses need not be very bad, if we may judge from the favorable progress of ulceration, granulation, and cicatrization in the case reported.

The antithesis of the amniotic navel is a condition in which the skin of the abdomen closely invests and even ensheaths for some distance the umbilical end of the funis, which in such case receives also an investing sheath from the deeper-lying aponeurotic tissue (Weber, Beiträge zur path. Anat. der Neugeborenen, 1854, iii., p. 5).

The umbilical vessels are closely bound together for some distance before entering the abdominal cavity, and the peritonæum lines the internal aspect of the umbilicus with a plane serous surface, without any attempt to follow the out-reaching aponeurotic layer.

The formation of the umbilical cicatrix is somewhat retarded by the necessary shrinking and retraction of the pouting stump, but finally ends in the usual appearances (Widerhofer, loc. cit.). Such an umbilicus may, in contradistinction from the foregoing amniotic navel, be called *cuticular*.

Among the anomalies of the umbilical vessels may be reckoned an extra single arteria umbilicalis given off from the inferior mesenteric artery (Boudant, Bull. de la Soc. anat., 1829, p. 11), or directly from the abdominal aorta (Mende, Nov. Æt. Cæs. Leop. Carol. Nat. cur., 1827, xiii., p. 871), a single umbilical artery which splits into two or three branches before reaching the annulus (Scanzoni, Prag. Vierteljahrsschrift, tom. xxi., p. 34), or two art. umb., having normal origins, uniting to pass through the annulus as a single vessel (Todd's Encycl., ii., 829), or the art. hypogastrica gives off an accessory art. umbilicalis (Ossiander, Annal. d. Entfindungskunst, ii., p. 80). The artery on one side may be absent, and the other proportionably increased in size; this anomaly happens most frequently with umbilical or abdominal fissure or deficiency of a lower extremity (Bauhinus, Theat. Anat., lib. i., cap. xi. Hebenstreit, Path. funic. umb., p. 13. Röderer, Dess. de fœtu perfecto. Haller, Opuscul. path. obs.,

xxxv. Sandifort, *Observ. anat. path.*, L. iii., 1779, p. 7. Wrisberg, *Descr. anat. embryonis observ.* iv., p. 51). Or the umbilical arteries may come from the abdominal aorta (Krause, *Henle's Handb. der Anat.*, iii., i., p. 281), the common iliac (Theile, and Krause, *loc. cit.*, p. 287), or the obturator (Krause).

The umbilical vein may enter the annulus as two or three distinct vessels, uniting within the abdomen (Haller, *Elem. phys.*, tom. viii., p. 221. Monro, *Elem. of Anatomy*, 1825, ii., p. 282). A number of variations of origin, number, and distribution of the umbilical vein is found dependent upon the kind of monstrosity, and the peculiar anomaly of the heart and great vessels. The vena umbilicalis has been seen going directly to the right auricle (Puchelt, *Venenasystem*). Occasionally the umbilical vein has a companion which runs into the v. meseraica (Kerkring, Serres, Krause, *loc. cit.*), and there may be persistence of the v. omphalo-meseraica, which normally becomes extinct by the fifth week. Congenital slenderness of the umbilical vessels (Barkow, *Anatom. Abhandl.*) and ectasy of the right artery (Froriep) have been observed.

In the retrogressive changes of the umbilicus, an important datum is that the arteries are occluded sooner than the vein, though the vein may be soonest deprived of its function as a vascular canal; nor does the vein appear to take any disproportionate part in the morbid changes when inflammation of the umbilicus (omphalitis) involves the tissues making up and neighboring to the navel.

Omphalitis may result from the irritation caused by the dry portio caduca included in the folds of an ill-applied bandage, or pressed down upon the tender parts by too close swaddling (Billard). It may be the result of neglecting to wash the sore, of rancid salves and such irritating applications, of direct infection by the bathing-sponge or compress, which has been soiled by the lochia or other foul material.

Then, too, in a crowded and ill-ventilated asylum there are likely to be many other unhealthy navels and the emanations of many lochia, besides, in a hospital, the proximity to surgical diseases of a nature to exhale injurious materials.

Weak and otherwise dyscrasic children are likely to have a slow and easily disturbed healing of the umbilicus, and they are also more obnoxious to the disastrous effects of pyæmic, ichorrhæmic, and septæmic infections.

The usual steps in the formation of the navel, the moderate secretion followed by cicatrization of the young connective tissue, in which the neighboring skin participates, may be disturbed by excessive granulation. The granulation tissue in such cases

risks above the surface in the form of a red, succulent, or spongy swelling, *fungus umbilici*, sarcomphalus (Widerhofer) reaching the size of a raspberry or strawberry, sessile on a wide base, or pediculated and projecting over the excoriated margin of the cutaneous ring.

This accident may happen to one part of the sore while another part is healing (3d to 15th day), or appear immediately after the falling of the cord; or the cord may be only partially detached, with these superfluous granulations at the point of detachment. And such is the persistency of the process that new granulations have been seen to spring up in the place of others which have been carefully destroyed (Arming).

Under the influence of morbid systemic conditions, as for instance pyæmic infection, the umbilicus may become ulcerous immediately after the fall of the cord, or after the decay of the granulations. Sometimes the removal of a croupal or diphtheritic crust leaves the umbilical surface discharging either pure pus, or a thin, bloody, or ill-conditioned ichorous fluid.

Not unfrequently the ulceration deepens at the expense of the connective tissue which binds the ends of the vessels to the annulus, thus forming a cloaca filled with pus, and exhibiting at its bottom the occluded vascular extremities. If the walls of this cloaca contract through healing or mere swelling, the pus confined in the cavity may be made to exude through the small outlet as through a fistula.

The participation of the surrounding tissues (omphalitis) in the inflammatory conditions of the navel may be limited to swelling, excoriation, or ulceration of the skin neighboring to the navel; there may be formation of a small abscess, or a circumscribed erythema, or a diffuse erysipelas, which is to be reckoned as traumatic in the same sense as the erysipelas of mastitis or of vaccination.

In the higher degrees, the inflammation of the skin has a phlegmonous character; the subjacent layers of tissue may become involved, even to the peritonæum. The abdomen then becomes tumid, and swollen veins intersect the stretched skin of its tense walls, and the region of the symphysis becomes cedematous.

The sub-peritonæal layer is more or less infiltrated with serum or sero-purulent material and traversed by lymphatic vessels loaded with pus.

Among the not unusual complications of such cases may be mentioned catarrhal affections of the air-passages and digestive tract, exudations into the serous cavities, sclerema and icterus.

In happy cases, with the diminution of redness the stretched

and shining skin begins to wrinkle and the infiltration is removed by absorption. Where there has been loss of substance the chasm is obliterated by cicatricial contraction.

Untoward cases are characterized by peritonitis, at first limited to the peritonæum in the immediate vicinity of the umbilicus; perforation of the abdominal wall may be the consequence of exulcerous or gangrenous extension; intestinal loops which have been soldered to the abdominal wall by peritonæal adhesions may be opened, as may be the distended urachus.

The unsealing of vessels may give rise to umbilical hemorrhage; or pyæmia or septæmia may impend still more threateningly.

Omphalitis may give rise to *umbilical gangrene*, or it may be secondary to different exhausting diseases in their latter stages.

As a result of omphalitis it generally appears as an ashy discoloration at a border of the ulcer, widens and deepens.

The surrounding tissues may take on a liminary inflammatory reaction, and, after the fall of the eschar, cicatricial healing may be accomplished; or a larger eschar may expose the mesentery or intestine, which, haply, becomes the basis of a cicatricial healing. If a previously adherent intestine be perforated, death may take place as a consequence of diffuse peritonitis, or a less fatal result may be formation of a preternatural anus at the umbilicus.

The partially obliterated urachus may be opened up; even the bladder may be involved in the perforant process.

Thrombosis of the umbilical vessels is of sufficient interest and frequency to have attracted the attention of many careful observers.

Opinions are not quite in accord as to their mechanism and influence.

Umbilical hemorrhage (omphalorrhagia) may be considered in two kinds, according as the bleeding proceeds from the parenchyma of the navel or from the vessels themselves.

In the last case it is usually arterial, though not coming in jets; it may appear soon after birth, in consequence of a faulty dressing of the umbilical remnant, loosening of the ligature,—especially in case of the so-called fatty cord,—or later, in consequence of forcible or premature separation of the *portio caduca*.

But this form gives way in consideration to the more insidious and less explicable bleeding from other parts and other causes—not forgetting the oozing which may result from a partial separation of the arterial plug, or disturbance of the still imperfectly closed vessels by the gangrenous process.

The name parenchymatous may be applied to the slight bleed-

ing which, under otherwise normal conditions, may happen from very vascular fungosities or excoriations.

Least explicable are the so-called idiopathic hemorrhages, in which there is an almost irrepressible tendency of the blood to ooze from an apparently healthy and cicatrizing umbilicus, from the stump of the cord, from the point of partial separation, from a granulation or fissure of the circumference or area of the healing surface.

This hemorrhage usually takes place after the fall of the cord. In 135 cases collected by Grandidier (*Schmidt's Jahrb.*, cxvii. *Jahrb. f. Kinderkrankh.*, xxxii.), bleeding took place before the fall of the cord in 38 cases; in 26 cases, at the same time with, and in 71 cases, not long after the fall of the cord. Grandidier states the average time of bleeding at from the fifth to the ninth day after birth, with one exceptional case at the fifty-third day. Bouchut (*op. cit.* p. 49) observed it between the seventh and thirteenth days.

From the studies of Grandidier it would appear that of 202 cases of such hemorrhage 169, or about five-sixths, died; that the bleeding may begin without preliminary symptoms; the escaping blood is not coagulable as in ordinary hæmophilia, and that the hemorrhage is secondary to or combined with an hereditary tendency, disorders of nutrition of the child or mother, tubercle (*Mausley, Lond. Gaz.*, 1850, May; case at length), icterus, phlegmasia of umbilical vessels, vices of conformation of umbilicus (*Allaire; case in Bouchut, op. cit.* p. 48), liver, vena porta, etc. In most cases of hernia at the umbilicus (*hernia umbilicalis, omphalocele*) in children the tumor varies in size from a cherry to an apple, and the longer the hernia exists the narrower proportionally is the opening likely to be in reference to the outstanding tumor; for in early cases the hernial mass projects as a herni-ovoidal or somewhat cylindrical tumor through a largely dilated opening, while at a later period it appears as a more globular mass, with a somewhat constricted pedicle in the proportionally contracted annulus.

The coats of the tumor are generally thin, two or three in number, according as the peritonæum is omitted or pushed forward with the skin and fascia propria, and the contents generally only a loop of intestine, or may be a small part of the mesentery.

But these are the simple cases. Meanwhile others occur in which the tumor may be so large as to hang down to the thigh, and the ring so dilated that almost the hand may be pushed through it.

The skin may be so thin and translucent that the wrinkles of the hernial intestine can be seen through it, and the atrophy of

the other coats of the tumor may be such that nothing more than a little fat seems between the skin and the peritonæal covering of the intestine; or the fat may cause the skin to feel thicker than it really is.

The subcutaneous cellular tissue may, on the contrary to the mentioned atrophy, be very dense, and contain considerable lumpy fat.

The fascia propria is not subject to much variation beyond a general thinning or pretty intimate contiguity to the skin—occasionally here and there thickened and thinned irregularly.

The subserous tissue may contain considerable lumps of fat which, projecting under the fascia propria, give rise to the so-called hernia adiposa.

The peritonæum is generally less thick and more transparent than normal, and in cases of some standing more or less fused with the overlying tissue.

Among the contents may be found, besides or in place of the usual intestinal loop, the transverse colon, and part of the stomach or duodenum (Lassus, *Path. Chir.*, Paris, 1806).

A comforting reflection in the study of infantile umbilical hernia is that it often (most writers say generally) subsides spontaneously. Scarpa, Cooper, and others, give a rather discouraging list of accidents, principally inflammatory, which may befall the hernious parts. Uschakow notices a case of artificial anus formed in the tumor (*Med. Zeit.*, Russl., 1850, 16.; see also *Arnal. Gaz. des Hôp.*, 1851, 46).

Abscess of the umbilicus as a consequence of suppuration of peritonæal exudation, perforation of an hepatic abscess at the navel, escape of gall-stones, and echinococci, have been noticed; also the formation of an entero-umbilical fistula to accommodate the escape of intestinal worms (Lenkart, *d. menschl. Parasit.*, i., p. 276, ii., p. 241; Schmidt's *Jahrb.*, tom. xli., p. 288).

The umbilical arteries may sometimes not be obliterated below a point where, in such case, they give off one or more superior vesical arteries; and the arteries have been found pervious, and otherwise normal, quite to the umbilicus (Kerkring, *op. cit. supra.* Haller, *El. Phys.*, vi., p. 483), and later pathologists speak of a similar patency of the umbilical vein; but Robin (*Gaz. Méd.*, 1860, No. 48, p. 756) insists that the umbilical vein, from the navel to the liver, is in no connection with any other vein, that it immediately becomes obliterated, and, having no anastomosis with other vessels, is incapable of assisting in the future independent circulation of the child.

Rokitansky, indeed, speaks (*Path. Anat. Syd. Soc. Transl.*, Ed. 1855, vol. iv., p. 250) of "an anastomosis of the epigastric cu-

taneous veins with the umbilical vein at the navel, on which depend the persistence and patency of the latter vessel," and Cruvelhier (Anat.) says he has once found the umbilical vein perfectly permeable in an adult (Anat. Patholog., Liv. 17).

Kerkring, Otto, Spangenberg, Hyrtl, Bamberger, Virchow, and Klob are mentioned by Wrany as having noticed such anomalies.

But Sappey (Bull. de l'Académie de Méd., xxiv., 1859, Juin, p. 953) avers that the patent vein is not the vena umbilicalis but a large accessory subperitonæal vein (V. parumbilicalis, Schiff), which, with others of its group, anastomoses in the rectus sheath with the internal mammary, epigastric, and subcutanea abdominis veins.

The Buccal Secretion of New-born Children and Young Sucklings. (Bitter von Rittershain. Jahrb. für Physiolog. u. Path. des ersten Kindesalters. 1868, p. 131.)

One of the earliest observers who has recorded an attempt to solve the question whether there is saliva or not secreted into the infantile mouth during the early weeks of life was the elder Joerg (Phys. und path. Leben des Kindes, ii. Aufl., Leipzig, 1836, p. 88), who, in speaking of the digestive process in the child, remarks that whatever the new-born child takes into its mouth passes on to the stomach without mechanical or chemical change, because the ordinary salivary secretion is wanting in the first weeks of the child's life, and appears only after a more perfect development of the intestinal canal and salivary glands.

In considering the appearance of muguet in new-born infants or those but a few weeks old, Dr. A. Jacobi says (Dentition and its Derangements, 1862, page 57): "It is, however, probable that its cause is to be sought for in the impaired digestion, want of mastication, absence of saliva, &c." In the following year Vogel (A. Vogel: Lehrbuch der Kinderkrankheiten, 1863, p. 83) remarks that the preponderance of acid reaction in the buccal cavity at that early age depends upon the absence of saliva.

Admitting the suspension of the ordinary chemical effects of the salivary secretion in the mouths of young infants, the probability of its entire absence is much strengthened by the fact of its absence from the mouths of other young animals under analogous conditions.

In animals who do not chew at all, saliva serves to render the bolus of food more slippery and easily swallowed, and this mechanical purpose of the secretion is made evident by the extensive occurrence of salivary glands in the carnivora, that need saliva to lubricate their hastily masticated food rather than to

transform starchy substances; in birds (Bergmann and Leuckart, *Anat. physiol. Uebersicht des Thierreiches*, Stuttgart, 1852, and Hyrtl's *topograph. Anat.*, iv. Aufl., T. i.); in the mollusks (Müller), and in insects (C. Vogt: *Zoologische Briefe*, Frankfurt a. M., 1851, T. i., page 587). Animals who live in the water, as fishes, the cetacea and phocæ, have no salivary glands, for the abundance of moistening material about them renders any peculiar secretion unnecessary.

The mechanical condition of the food of the young child renders any diluent or lubricant unnecessary, and the lack of a masticatory apparatus precludes the attempt to chew dry or hard material.

At this age, too, there is no need of a special contrivance to change starch into sugar and dextrine—the chemical purpose of saliva (Leuchs, *Kastner's Archiv.* 1831).

Notwithstanding Bernard's dictum (*Arch. Gén. de Méd.* Janv., 1847), that the saliva acted chemically only by its alkalinity, which might be held in abeyance by acidity of the stomach, Frerichs (*Wagner's Handwörterbuch der Physiologie*, Bd. iii. p. 772) and Ludwig (*Lehrbuch der Phys. des Menschen*, ii. Aufl. B. ii. p. 623) have shown a moderate degree of acidity, even if produced artificially, does not destroy the chemical action of the saliva, and Jacobowitsch (*De Saliva*, Dorpat, 1853) has observed that starch was changed in the stomach of a dog, even when placed there directly; but the process was interrupted by tying the salivary ducts. But if the starch be not in a state of solution, or if it be enclosed in a cell-membrane, as in the potato, &c., it may pass into the intestine unchanged, and Valentin (*Grundriss der Phys. des Menschen*, 1855) has shown that a potato may lie in saliva twenty-four hours, at 40° C., without losing capacity for the iodine reaction.

Still, saliva changes raw amyllum into dextrine at a temperature of over 40° C.

Naegeli (*Die Stärkekörner*, Zurich, 1854) showed that at a temperature of 45° to 50° C., the cellulose of corn is slowly changed, and boiled starch at the ordinary temperature of the body.

Physiologists seem to agree that the buccal fluid of man produces the sugar-fermentation of starch quicker than the salivary fluid of other mammalia. According to Valentin, when the human buccal secretion comes in contact with filtered boiled starch or unfermented bread it requires but a few minutes to negative the iodine-test, and for Trommer's test to prove the presence of sugar. Bidder and Schmidt (*Die Verdauungssäfte und der Stoffwechsel*, p. 258), Lehmann, Schroeder, and Ritter

have found sugar in the mouth a short time after the introduction of a paste.

It seems that neither the watery secretion of the parotid, nor the more viscid product of the submaxillary, nor the buccal mucus alone, possesses the power of a combination of the three.

The ptyaline, first isolated by Cohnheim, is said by Ludwig to take no part in the sugar transformation, and to disappear in boiling.

That there is no need of a special process to render the food of the human infant fit for its stomach, during a certain period of its early life, is apparent from the perfectly assimilable character of the nourishment which it draws from its mother's breast; the mouth serving only as the nearest way to the stomach, along which the child eagerly hurries its meal at a rate much too rapid for insalivation, even when nurses administer materials which should be subjected to such a process. Indeed, it is difficult to obtain sufficient buccal secretion of any kind to experiment upon, as already mentioned by Bidder and Schmidt; and this is the more apparent when we reflect upon the rarity of the symptoms of ptyalism when mercury is used with such children.

Chewing is represented by the act of sucking, and normally the mucous surface exhibits only about as much moisture as Bidder and Schmidt observed in the mouths of animals after the ducts of the principal salivary glands had been tied; hence the rapid drying of the infant's mouth and its almost incessant thirst, which, though by no means the only, is a principal motive for it to seek the nourishing fluid.

In regard to the reaction of the material which moistens the mouth, Ritter made several hundred separate observations and found it acid, the exceptions being a few cases (5 per cent.) where disease or long abstinence had rendered the surface so dry that the test-paper was scarcely moistened, thus corroborating the remark of Bamberger (*Krankh. des chylopoet. System. Virchow's Handb.* 6, 1, ii. Aufl., p. 39, § 57).

That the constant acidity of the infantile mouth at this age exercises considerable influence in the development of muguet may be. Milk just from the breast has a neutral reaction, never distinctly alkaline, and its quick passage through the mouth can permit but a very slight portion of it to remain long in contact with the acid buccal surface. It is therefore a little surprising that such extensive acid changes can take place under such circumstances.

From a tabulated statement of observations made upon 21 children, whose ages varied from one day to eight months, at

periods varying from 10 minutes to two hours after feeding, in which a paste was put in contact with the buccal surface and then examined for the presence of sugar, as a proof of chemical change, some inferences may be drawn.

The children were all but one in good health; that one is noted as being weak. The paste remained in the mouth in some cases one minute, in other cases a time from two minutes to quarter of an hour.

Up to the 58d day the results were entirely negative; no sugar was found, no chemical change had occurred in the paste.

To the regularity of these figures, however, there were two troublesome exceptions; for in a child of 41 days slight traces of sugar were detected, and in another of 50 much sugar was found when the paste was examined.

In the case of a child of 5 months, the experiment was made two hours after it had been nursed, and traces of sugar were found. From this age till 8 months only traces of sugar are recorded; in one case, even, it was rather doubtful, although the child was quite 8 months old, and all the circumstances of the experiment seemed favorable.

In the child of 50 days the experiment was undertaken barely 10 minutes after nursing, and it is not unlikely that a portion of milk may have remained in the mouth, and thus vitiated the result by insinuating its own sugar where none would otherwise have been found; and it is not certain that the other child, who exhibited slight traces of sugar at 41 days, was not also fed too near the time of the examination.

Ritter ventures the suggestion that in such exceptional cases we should not overlook the influence which the introduced paste—it being a foreign substance to the mouth, which expects only milk—may exercise upon the dormant secretive faculty of the salivary glands.

Many older children furnished results indisputably negative. Yet a boy of 5 months (4 m. Bidder & Schmidt), and children a little older, in whom was a considerable quantity of buccal secretion, showed clear evidences of the sugar reaction.

A general result of the experimentations has been, that no sugar is normally formed in the mouth of the human infant during at least the first six weeks.

Considering, then, the foreign nature of the materials used in the ordinary mode of experimentation, the abnormal conditions which it must impose upon the buccal mucous membrane, and the uncertainty of provisions against the accidental admixture of sugar from the milk, it seems safer to make the direct examination of the buccal secretion, slight though it may be in very

young children, and difficult to collect, in order to determine the presence or absence of those constituents which characterize the actual salivary secretion.

Sulpho-cyanide of potassium being a normal constituent not only of the parotid secretion (Valentiner: *Die Chem. Diagnostik in Krankheiten*. II. Aufl. 1863, p. 60), but also of the saliva produced by the other salivary glands (Kühne, *Lehrb. der phys. Chemie*, 1868, p. 13), its presence becomes an unmistakable sign of actual saliva.

A primitive method of testing the buccal secretion for the sulpho-cyanide was practised by dipping the finger moistened with the buccal secretion into a dilute solution of sesquichloride of iron, expecting the characteristic red color in case the salivary salt was present.

From experiments made to determine the presence of the chemical constituents of the saliva, it would appear that no saliva is present in the child's mouth until a period still undetermined, but which may extend even to the seventh month.

Although attempts to enter the duct of Steno in the infant have been futile, it is not necessary to suppose that the outlets of the glands are impermeable, and that the lack of saliva in the mouth depends upon anatomical obstacles.

Increase or diminution of the salivary secretion, or change of its intrinsic proportions, may perhaps be explained partially by reference to physiological conditions of the vascular and nervous apparatus of the glands.

The nerves of the salivary gland end, according to Pflüger, in a fine axis-cylinder in the interior of a gland-cell, or with the appearance of a small ganglionic mass from which slender twigs plunge into the gland-cells. It is probable that the ganglionic terminations of the sympathetic are similar to the free cerebro-spinal filaments. The glands are abundantly supplied with blood, and their vascularity seems to be under the influence of two separate nervous foci, the sympathetic and fascialis or trigeminus, since electrical irritation of the sympathetic contracts the vessels and diminishes the sanguineous stream (Ranke), while, on the contrary, irritation of the fascialis or trigeminus dilates the vessels and hurries a full bright-red stream through them.

Czermak has observed that a simultaneous irritation of the lingualis and sympathetic had the effect to stop the production of saliva, and he explained the phenomenon by interference of the nervous currents, or stagnation of the current of blood, or obstruction of the salivary passages by the thicker and more viscid secretion.

Percentage of Water in the Brain, according to ages, sexes, and diseases.—The results of DR. A. WEISBACH's investigations on the amount of water in the brains of different ages and sexes, and in different diseases, are as follows:

1. The amount of water differs in the several parts of the brain. In the adult the gray substance contains a larger percentage than the white. In the new-born the proportion is the reverse, there being more water in the white substance. Still, the differences are less marked in the new-born.

2. The percentage of water is largest at birth, diminishes until the twentieth year, and increases again afterwards.

3. In almost every case the male sex has a larger percentage.

4. Diseases work great changes; acute ones increase the amount of water; chronic ones render it less. The maximum is found in meningitis and hydrocephalus; the minimum in typhoid and typhus fevers, and tuberculosis.

5. The percentages of blood and water exhibit an inverse ratio in almost every case; so do frequently the firmness of the brain and its amount of water. (*Medicinische Jahrbücher*, xvi., 1868. iv. & v.)

Foetal Abscess in Thymus Gland.—Dr. Dohrn describes the thymus in an otherwise normal new-born child found dead at the roadside. The gland was eight centimetres in length, five in breadth, and covering three-quarters of the pericardium. Its substance was firm and uniform, no prominences on the surface, but many small petechial sugillations. In both the right and left lobes, nearer the centres than the margin, on each side, three cavities of pea size, not connected with each other, without pyogenic membrane, with a greenish-yellow, muco-purulent liquid; the wall of the abscess (?) appeared unchanged, the substance of the gland near the cavities as solid as the rest and not congested.

If this can be claimed as a case of abscess, it is an exceptional one. Abscess has been observed, though, in infants, and has been attributed to syphilitic origin. (*Vierteljahrsschrift für gerichtliche und öffentliche Medicin.* Jan., 1869.)

Diphtheria.—Prof. W. ROSER urges the following twelve points as the present results of the investigations on the diphtherite of wounds. He follows the nomenclature of Bretonneau and Trousseau in the application of the terms "diphtheria" and "diphtherite." It is well known that in the beginning, up to 1855, Bretonneau used the word diphtherite both for the local and constitutional affections, until he found it necessary to sub-

stitute the term diphtheria for all such cases of the disease in which the constitutional symptoms are prevalent, and the local affections, deposits, membranes, infiltrations (cf. Article on Croup in *Am. Jour. Obst.*, May, 1868), appear as the local manifestations only.

1. There is not only a diphtheria of the skin, but also of wounds; patients with wounds, lying near such with pharyngeal diphtheria, may be inflicted with diphtheria of the wound.

2. Diphtheria of the wounds and hospital gangrene are not identical; their similarity renders the differential diagnosis very difficult. The diphtheritic appearance of a wound can have a number of different causes.

3. Wound diphtheria may be followed by diphtheritic paralysis; this affection has not been observed after hospital gangrene.

4. There exists a hospital angina, *angina nosocomialis*. Hospital gangrene has such similarity to diphtheria as to give rise to angina which looks very much like diphtheritic angina; there are many anginae, of different nature, although of diphtheritic appearance.

5. If "croup" is used as the term for the presence of pseudo-membranes in the larynx, there is a diphtheritic, pyæmic, scarlatinous, perhaps also a typhous, variolous, etc., croup.

6. There is a diphtheria of the gums and mucous membrane of the mouth, which ought not to be mistaken for simple epidemic stomatitis.

7. There is a diphtherite of the vesical mucous membrane, particularly when the urine is ammoniacal. We are not justified in attributing it to a specific infection (by hospital gangrene).

8. Whatever has been called diphtherite of the mucous membrane of the colon, may be the result of different specific affections. The diphtherite of the colon may be dysenteric, nosocomial, pyæmic, typhoid, or toxical.

9. Diphtherite of the vagina may be either genuine diphtheria of the organ, or hospital gangrene, or pyæmic, blennorrhœic, syphilitic, etc., inflammation.

10. The conjunctiva can be affected with genuine diphtheria; but there are, beside the diphtheritic contagion, a number of causes giving rise to similar fibrinous exudations and infiltrations.

11. It appears necessary to characterize a septic or cachectic diphtherite as special forms.

12. The cases of so-called secondary diphtherite are of different characters. Some must be taken for genuine diphtheria of a patient or convalescent; some are due to pyæmia; some may be due to septicohæmia and ammoniohæmia.

The Normal Temperature of Children.—Mr. JAMES FINLAYSON, Manchester, Eng., states the following results of a large number of examinations:

1. The daily range of temperature is greater in the healthy child than that recorded in the healthy adult, the range being as high as 2 or 3° F. instead of 1° F., as found by Davy, Giese, Fröhlich, and Lichtafels.

2. There is invariably a fall of temperature in the evening, amounting to one, two, or three degrees.

3. The most striking fall usually occurs between 7 and 9 P. M., although it often begins about 5 P. M., and frequently continues on till after midnight.

4. The minimum temperature seems usually to be reached at or before 2 A. M.

5. The temperature usually begins to rise between 2 and 4 A. M., while the child is still sleeping soundly, and before food has been taken.

6. Fluctuations between 9 A. M. and 5 P. M. are usually trifling.

7. There seems to be no very definite, or at least obvious, relationship between the frequency of the pulse and respirations and the amount of normal temperature. The importance of the above data is elucidated by the following instance: High evening temperatures are the rule, in cases of tubercular and enteric fever—often most difficult cases to make out in the young subject. A persistent evening rise of only one or two degrees comes to be very significant of mischief, if in health; there ought really to be an evening fall to that extent. (*The Glasgow Medical Journal*, No. II., Feb. 1869.)

Burns of the Pharynx and Epiglottis.—When we consider the restless avidity with which young children seize upon every small or convenient object and thrust it into their mouths, and the easy access which they have to a large variety of injurious and dangerous objects, especially in families unable to provide their numerous progeny with a watchful attention, it is a matter of some surprise that they escape childhood with so few injuries to the mouth and throat.

Two cases of burns of the pharynx and epiglottis, related by Dr. Thiessen (*Jahrb. f. Kinderhk.*, 1867) are interesting not only from the autopsies, but also on account of the preservative measures recommended.

Both children swallowed a quantity of boiling water. When seen a little time after, they were pale, moaning, with a raucous

voice, and respiring with evident difficulty. The extremities were cold. The first thought was of croup, but the strange whistling sound which accompanied the painful inspirations, the projection of the swollen tongue beyond the teeth, and the swelling of the lips, suggested the lesion which an examination discovered.

Cold applications were made to the necks, but during the night the younger, a child of eighteen months, died.

In the morning the survivor, a boy of three years, presented all the appearances of impending suffocation. Urged by the circumstances, tracheotomy was performed; the child immediately breathed more freely, commenced to cough, and expelled by the canula a small quantity of bloody mucus. But he finally passed into collapse, and died eighteen hours after the operation.

The autopsy showed in the younger, besides the marks of the burning in the back part of the mouth and the pharynx, a brawniness and oedematous swelling of the epiglottis, of the borders of the glottis, and of the ligamentous folds of the larynx. In the interior of the larynx and trachea there was found only a little bloody serosity. There was no swelling, and the mucous membrane showed hardly more than a slight redness in the laryngeal region.

The lungs were deeply congested, and when incisions were made much sanguinolent liquid poured out. The veins of the neck, as well as the right cavities of the heart, were gorged with blood.

In the other cadaver the appearances were quite similar, plus the tracheotomy, and in both cases there seemed to be no obstacle to the passage of air freely through the larynx.

Yet the dyspnoea was so excessive as to suggest tracheotomy, and the temporary success of the opening in the trachea certainly might be admitted as proof of a serious obstruction higher in the laryngo-tracheal tube.

Bevean (*Dublin Journ.*, Nov., 1866) disapproves of tracheotomy, and supports his recommendation of a mercurial treatment by eight successful cases. In analyzing 36 cases where tracheotomy was performed for combustion of the pharynx and epiglottis he found that 25 died; while 9 cases treated vigorously with mercury all recovered. His explanation is that not the larynx but the lungs themselves are the seat of the dangerous lesion, and this is supported by the observations of Bryant and Wilks, who found the lungs congested and even hepatized.

The fact then is, that the lungs quickly become congested and pneumonia begins. Hence tracheotomy is proscribed as useless,

and mercury recommended as an antidote to the congestion and pneumonia.

If the stomach be loaded, the treatment may be commenced by an emetic, and if the child be strong and plethoric, it is recommended to apply several leeches to the top of the sternum.

If the symptoms indicate that the epiglottis has been injured—in which case the finger introduced into the throat may find the epiglottis hard and swollen—the mercury is to be given at once.

The dose mentioned is half a grain every half hour, to be diminished as the symptoms mend, or in contrary cases to be carried to salivation or the characteristic stools.

In cases where the dyspnoea has already commenced we are advised to supplement the internal administration of mercury by external mercurial friction upon portions of the skin which have been somewhat tumefied by a preliminary vesicatory.

In the mean time such nourishment may be given as the child can swallow. (*Archives Gén. de Méd.*, 1868, p. 787.)

REVIEWS AND NOTICES OF BOOKS.

A TREATISE ON THE DISEASES OF INFANCY AND CHILDHOOD.
By J. LEWIS SMITH, M.D., Curator to the Nursery and Child's Hospital, New York; Physician to the Infant's Hospital, Ward's Island; Professor in Bellevue Hospital Medical College, New York. 8vo. Philadelphia: Henry C. Lea. 1869. pp. 620.

THIS volume came to hand too late to be noticed in our last number, and want of space will of necessity cause us even now to be more brief than we could desire. Our fellow-townsmen, Dr. Smith, is well known among us as an indefatigable worker, and one who has devoted the major part of his time to the study, theoretically and practically, at the bedside and in the dead-house, of the diseases of children. From a careful perusal of his work we agree with the author, that while he has respected the opinions of previous writers, and has adopted them so far as they appeared to be correct, he has depended much more for the material of his treatise on clinical observation and the inspection of the cadaver.

The author devotes Part 1 of his work, 78 pages, to the consideration of topics not always treated of in works upon this subject, but of more than general interest to the student, because they are not even alluded to in the few lectures upon the diseases of children given in any of our schools of medicine. The remarks in Chapter 3, on mortality in early life, its causes, with the suggestions for its diminution, are excellent.

We would call attention also to Chapter 4, devoted to the discussion of the subject of lactation, in which the author has followed the advice given by so many of his predecessors—an advice which cannot be too forcibly impressed upon our younger brethren. The chapter upon artificial feeding is not so full or so explicit as we could desire, and many points upon this important subject are not even alluded to. We would also deprecate the advice given in the concluding portion of this chapter, regarding what we must consider the too early addition to cow's milk of articles of diet difficult of digestion at this period of life. The author affirms that "after the age of six months various kinds of solid food which are easily digested may be allowed, but the infant should not have the ordinary and full table diet till after the age of two years." We would feel extremely anxious regarding the health of infants under our supervision of from six months to two years of age, fed during the summer season upon "various kinds of solid food which are easy of digestion;" for in our experience such a diet not unfrequently occasions much suffering and avoidable disease, sometimes of a fatal character.

Part 3 is subdivided into five sections. Section 1, being devoted to the diseases of the cerebro-spinal system, contains nothing specially new or original. The chapter upon Tetanus Nascentium is one of the best written articles in the volume, and is sufficient of itself to make the book a valuable addition to one's library. In this chapter will be found all that is known upon this comparatively rare disease at present, but one which destroyed, many years since, thousands upon thousands of infants. Some few years ago Dr. Smith wrote the best article in our language upon Trismus Nascentium, from which the present chapter has been taken.

While justly praising Chapter 12, we must take exception to the heading of the one which follows—namely, Internal Convulsions—an indefinite though popular term, although the author is upheld in his nomenclature by Trousseau. Spasm of the Glottis would have been better.

Diseases of the organs of respiration are treated in Section 2, in which are shown the results of much hard labor and research,

free reference being made to the experience of those who have given great attention to this class of diseases. Dr. Smith does not seem warmly to endorse tracheotomy as a dernier resort in the treatment of croup. The statistics of this operation, published in the May number of this journal by Dr. Jacobi, are given, and acknowledged to be exceedingly favorable, but, like the great majority of our physicians, he does not give the operation that decided favor that statistics seem to warrant. All must acknowledge that hundreds of lives have been saved by this proceeding. We agree most heartily with the author in his therapeutical treatment of the different forms of bronchitis and pneumonia, especially in those mild cases where but little medicine is administered internally, and we are advised to rely upon proper diet, proper hygienic surroundings, and external applications to the chest. Applications of an oily or greasy character, however, should be avoided, as also the direct application of the oil-silk jacket to the chest, as they tend to prevent cutaneous exhalation. Poultices answer far better, favoring, as they do, absorption of effete matters thrown off by the cutaneous glands; while these glands can be stimulated by the addition of mustard, camphor, or any other irritant to the poultice. The oil-silk jacket outside prevents the cooling and drying of the poultice. As Dr. Smith remarks, the relief generally observed upon their application is surprising. The author does not fully agree with many writers upon infantile pathology, that the expiratory moan is pathognomic of pneumonia, as he has seen many exceptions where it was due "to acute dyspepsia," or arose "from certain forms of abdominal inflammation, which render movements of the diaphragm painful." This moan, he considers "evidently due to the pain experienced by the friction of the inflamed pleura." But little stress is laid upon the rapid falling of the temperature about the fifth, seventh, ninth day, or even later, as an indication of improvement, which has been so strongly insisted upon by Ziemssen in the pneumonia of infants, and whose statements have been corroborated by Traube in pneumonia of adults. Ziemssen says that convalescence began, as marked by sudden fall in temperature, upon *uneven* days, in 95 out of 107 cases.

Dr. Smith does not agree with Bouchut "that the lung of the child in the second stage of pneumonia can be inflated, as it confessedly can in the first stage." But he affirms that partial inflation in lobular pneumonia is possible. The round, granular, nucleated cells, which have been called "pneumonic cells," and of which Dr. Smith states that they "occur in much greater abundance than all the other cells, and that the increase

of solidity and greater specific gravity of the lung is due almost wholly to them," are not now considered cells peculiar to inflammation of the lungs, but are found wherever any inflammation occurs, being a proliferation of the nuclei found in the outer coat of capillary vessels. Referring to the treatment of pneumonia, experience hardly justifies the application of blisters to the chest, and even the use of the tincture of iodine is by many considered of doubtful efficacy, as the irritation frequently caused by it much more than counterbalances its good effects. We have seen delicate infants almost convulsed by it.

Upon the subject of dentition Dr. Smith is conservative, believing that it may in some cases lead to different pathological changes, as convulsions and diarrhoea, but that frequently these changes result from other causes. He says that "in exceptional instances eclampsia occurs mainly from dentition, or if there are other causes, they are quite subordinate. This may happen when several teeth penetrate at or about the same time. Infants who are burnt or scalded are very liable to clonic convulsions. * * * So the swollen and tender gums of several teeth about emerging may affect the cerebro-spinal system like the burn or scald, and produce the same nervous phenomena." The author very judiciously disapproves of the very common custom of lancing the gums for any little ailment that may occur coincident with the evolution of any set of teeth. "If there are no symptoms except such as occur directly from the swelling and congestion of the gum, the lancet should seldom be used." "This idea of tension and resistance of the gum from difficulty of absorption must be abandoned." But he advises the use of the lancet "when there is an abscess over the tooth," due to inflammation of the follicle of the tooth.

We would call special attention to Chapter 18, upon intussusception, being, as we believe, the most complete article upon this subject ever published. In the Appendix, to which we shall refer subsequently, the author has collected 52 cases, and to these he frequently refers while describing certain phases of the trouble.

In the concluding portions of the book are treated zymotic diseases, and diseases of the skin; and though the latter class of disease is not treated very fully, yet the subject does not belong properly to a work upon diseases of children. In Appendix A we have given the mode of preparing certain forms of food for infants; and in B are described the appearances of the liver in 33 infants who died from entero-colitis during the hot months of summer. The author states that "they were made in order to determine the correctness or falsity of a pretty general belief on the part of city practitioners, arising probably from the frequent

green appearance of the stools, that the function of the liver is perverted, and the bile therefore unhealthy in this disease. These observations are sufficiently numerous, in my opinion, to prove that mercurial or other treatment designed to modify or correct the functions of this organ is not justified by the anatomical character of the disease." Appendix *C* records the chief symptoms, duration, and the position and extent of invagination in 52 cases of intussusception.

Though we may differ from the author in certain points in the pathology and treatment of diseases of children, yet we have done so with the kindest of feelings, and most heartily do we wish the work the success it so richly deserves. J. B. R.

PENNSYLVANIA HOSPITAL REPORTS, Vol. II. 1869. Philadelphia: Lindsay & Blakiston. pp. 320.

It has long been a subject of surprise to us that none of the staffs of many of our large hospitals should have followed the example of our trans-Atlantic confreres, in publishing reports of their valuable hospital experience in both medicine and surgery. At last, however, this work has been commenced, the Philadelphia physicians being the first to occupy this field of usefulness, having issued the first volume of the Reports of the above hospital last year, and the second volume on January 1st, 1869. The first Reports were so favorably received on both sides of the Atlantic, that it is hardly necessary to speak for this volume the universal welcome of which it is deserving. Like the first, this one consists for the most part of papers of a practical character, based chiefly on observations made at the hospital.

Besides exceedingly valuable articles on surgical diseases, in which many interesting and original points in regard to their treatment are brought forward, we find others of equal value and interest on pathology, as also on the treatment of certain diseases.

The articles deserving especial commendation are the following: "The Influences of the Weather over the results of Surgical Operations, and the value of the Barometer as a guide in the choice of the time for, and the Prognosis in such Operations. By Addinell Hewson, M.D." "Statistical Account of the Cases of Urinary Calculi operated on in the Pennsylvania Hospital, from 1756 to 1868, inclusive; with remarks. By Thomas George Morton, M.D." "Excision of the Hip-joint, with special reference to the Treatment of Hip-disease. By John Ashhurst, Jr., M.D." "Notes on the Principles of the Treatment of Fractures. By John H. Packard, M.D." "Report of a Case of

Retroversion of the Gravid Womb; with remarks. By George C. Harlan, M.D." "The Identity of the White Corpuscles of the Blood with the Salivary, Pus, and Mucous Corpuscles. By Joseph Richardson, M.D." "Observations on the Temperature in Phlegmasia Dolens, occurring in a case of typhoid fever, under the charge of Dr. J. F. Meigs. Reported by Elliot Richardson, M.D." "Statistics of the Pennsylvania Hospital for the year 1867-1868." The first of the above articles contains valuable statistical tables which prove that certain months of the year are less favorable to the results of surgical operations than others. From these figures it would appear that the most unfavorable results followed operations performed in the months of December and May, two months almost as much antipodal of each other, as regards temperature, as any other two in the whole year. From the fatal effects of shock, we have December also taking the lead, and immediately followed by November, June, and May, as giving the next highest in order. For deaths from pyæmia we have the last months of the summer, and spring giving the highest rates for the year. As to successes, the month which stands pre-eminent in total results is that of October, then comes January, and then April, the three giving nearly the same, the differences between them being not quite 3 per cent.; for the recoveries in the cases for October were nearly 89 per cent., and those for April over 86 per cent.

Dr. Ashhurst's paper on Excision of the Hip-joint is also one of exceeding merit, being illustrated with the lithographic likeness of a little patient before and after the above operation, and in whom it was eminently successful. Dr. Ashhurst has also compiled a valuable table of two hundred and forty-two cases of excision of the hip, in preparing which he states that he derived great assistance from the labors of Drs. Fock and Heyfelder in Germany, and of Drs. Sayre and Hodges in our own country.

The report of a case of Retroversion of the Gravid Womb affords another illustration of the difficulty which attends the diagnosis of some uterine affections. In this case the diagnosis of pregnancy of the retroverted uterus would have been left in doubt had not the patient confessed the fact, for the constant discharges of blood and membranous shreds which flowed from the organ during the version were carefully examined, but nothing more than a blood-clot or shreds of membrane ever appeared in them. It was evident "that the fœtus perished at the time of the first discharge of blood, a month before her admission to the hospital, and about eleven weeks after conception, and having putrefied and macerated, was discharged in a fluid condition." The discharge ultimately ceased as the organ regained its natural

size and position. We regret that space will not allow us to discuss the respective merits of the other papers, but we cannot close our remarks without stating that they are all valuable contributions to the literature of medicine, individually reflecting great credit upon their authors, and the volume which they collectively compose is one of which the Pennsylvania Hospital may well be proud, and will do much toward elevating the profession of this country in the estimation of their foreign brethren. The volume is tastefully and elegantly gotten up by the publishers.

BOOKS RECEIVED.*

PHYSIOLOGY AND HYGIENE FOR SCHOOLS AND FAMILIES. By J. C. Dalton, M.D. New York: Harper Brothers.

ON THE DISEASES OF WOMEN. By Prof. T. G. Thomas, M.D. Second Edition. Philadelphia: Henry C. Lea.

ESSENTIALS OF THE PRINCIPLES AND PRACTICE OF MEDICINE. By Henry Hartshorne, M.D. Philadelphia: Henry C. Lea.

LESSONS IN PHYSICAL DIAGNOSIS. By Alfred Loomis, M.D. New York: Robert M. Dewitt.

A CONSPECTUS OF THE MEDICAL SCIENCES, COMPRISING MANUALS OF ANATOMY, PHYSIOLOGY, CHEMISTRY, MATERIA MEDICA, PRACTICE OF MEDICINE, SURGERY AND OBSTETRICS. By H. Hartshorne, A.M., M.D. Philadelphia: H. C. Lea.

CORRESPONDENCE.

DR. P. D. L., TEXAS.

You can obtain vaccine virus from the Eastern Dispensary, New York, or from Bullock & Crenshaw, druggists, Philadelphia.

Your enlarged spleens are probably due to malarial influences. If so, quinia is indicated, no matter whether the intermittent process is still continuing or not. It must be administered for a long period, at least 10 or 15 grains a day to an adult, or from 6 to 10 grains to a child, and better in one or two large doses than in a number of small ones. In addition, iron, especially the iodide of iron, and anything that may improve the general condition of the patient. Ergot is very effective in recent cases, either the powder, or the acid infusion, or, what we prefer, the fluid extract (Squibb's), half an ounce daily for some time.

Cases of enlarged spleen, depending on cirrhosis of the liver or amyloid degeneration, are incurable.

* To be reviewed in next number.

P R I Z E S .

THE AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN offers the following prizes for the best essays on the subjoined subjects:

1. Fifty dollars (in gold) for the best essay on "Catarrh of the Uterus, its Etiology and Treatment."

2. One hundred dollars (in gold) for the best essay on "The Morbid Anatomy of the Placenta."

3. Fifty dollars (in gold) for the best essay on "Electricity in the Treatment of the Diseases of Infants and Children."

4. One hundred dollars (in gold) for the best essay on "Congenital Deformities and Diseases Depending on Maladies of the Uterus or Membranes."

Nos. 1 and 3 are to be sent to the publishers of this Journal on or before the fifteenth of December, 1869; Nos. 2 and 4 on or before the fifteenth of March, 1870.

The names of the authors will accompany the manuscripts in sealed envelopes, as usual with prize papers. The essays may be written in the English, French, or German language, and that one to which the prize will be awarded by the censors, whose names will accompany and vouch for the verdict, is claimed for first publication in the American Journal of Obstetrics and Diseases of Women and Children, on conditions to be agreed upon by the authors and the publishers.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. II.]

AUGUST, 1869.

[No. 2.

ORIGINAL COMMUNICATIONS.

ON THE TREATMENT OF UTERINE CATARRH.

BY JOSEPH KAMMEERER, M.D.,

Physician to the German Hospital and Dispensary, New York.

OF all the ailments which the gynæcologist is called upon to relieve, there is none so often met with as uterine catarrh, and it is especially frequent where alterations of the tissue of the uterus, and displacements of this organ at the same time exist. But even when occurring independently of other uterine affections, it is a subject worthy of the highest consideration of the pathologist, as, when protracted, it undermines the constitution of the patient, and, in my experience at least, constitutes the most frequent cause of sterility in the female. Out of 408 cases of sterility observed during the last ten years, I have found it to exist in 342.

The importance of this malady is greatly underrated even by experienced pathologists, as we may conclude from the small number of treatises published on this subject, and the slight attention paid to it in the discussions of scientific bodies, in comparison with the numerous and elaborate papers on flexions and alterations of form and position of the uterus.

Latterly the efforts of uterine surgery have been chiefly directed to the removal of abnormal mechanical conditions, and although ready to recognize the high value of some of the results of these endeavors, many will agree with me in saying that great abuses have been committed by the indiscriminate use of the knife.

In the management of chronic uterine catarrh a double treatment is to be pursued; the first directed to the system in general, and the second to the local infirmity. For the former positive rules have been laid down, the validity of which is recognized by all practitioners in this branch of therapeutics; but as regards the local treatment of uterine catarrh, there still exists a great diversity of opinion, and the debates on this subject are by no means closed.

There are some who anathematize all local treatment; others are satisfied with the application of topical remedies to abrasions and granulations of the vaginal portion; few are bold enough to attempt local treatment of the mucous membrane of the cavity of the uterus. The extreme reserve with which this subject is handled by some writers, sufficiently indicates that it is an unexplored region, into which the cautious traveller pro-

ceeds with hesitation and a certain dread of the difficulties he may have to encounter.

Considering the differences of opinion on this subject, I have thought, it might be useful to lay before the profession the results of fifteen years' experience in clinical and private practice. In so doing, I do not wish to be understood as thinking that my mode of treatment is the only one that will lead to a favorable result. I respect the labors of others, and should not have ventured to lay my own views before the medical public, were it not my opinion that it is the duty of those who have enjoyed large opportunities for observation to contribute their share to the advancement of our science.

Before entering upon details, it is necessary to state, that not all forms of uterine catarrh require local treatment. The slighter forms of this pathological condition yield to general treatment and hygienic measures. Whenever it depends upon alterations of circulation which cannot be removed, such as organic disease of the heart, tumors in the tissue of the uterus or its immediate vicinity, displacements which cannot be rectified, a radical cure will rarely be obtained. Still there are many cases of this kind in which a marked improvement may be brought about, and much comfort be given to the patient; and the practitioner should be guided by his experience in determining when he ought to abstain from interfering. Flexions and displacements of the uterus are serious obstacles to a perfect cure, but here modern surgery, especially as practised in this country, has taught us rational methods for the removal of their evil effects.

The most favorable cases for local treatment are undoubtedly those in which, beside the pathological condition of the uterine mucous membrane, no other alteration is present; and there is not a practitioner in our branch, who does not meet with new cases of this kind almost daily.

In accordance with the majority of observers I accept, that the physiological form of the virgin uterine canal is a slight anterior curvature, which straightens more or less after repeated deliveries. The physiological position of the axis of the uterus, if we are permitted to judge from sections made of frozen bodies, greatly varies; we should not, however, too hastily draw conclusions therefrom in regard to its disposition in the living body, as the muscular tone of the uterus and its appendages, and the vital turgidity of the pelvic blood-vessels may render it more rigid in the living body than in the cadaver. The fulness or vacuity of the bladder and rectum must exert their influence upon the direction of its axis. Excessive anteversion, with a physiological curvature of the canal, does not necessitate any intervention for the purpose of the treatment of catarrh, and, if my experience is correct, does not admit of any. Excessive retroversion should be rectified by proper means, as it is apt to change into retroflexion or descensus, if abandoned to itself.

When uterine catarrh is combined with ante- or retroflexion, it is advisable, before entering upon the treatment of the catarrh itself, to simplify the aspect of the case by first removing its complications, as the impediments to circulation occasioned by these alterations

in form and tissue, are in themselves sufficient to produce and maintain a hypersecretion of the mucous membrane of the canal. The retroflected uterus should be replaced with the uterine sound, and retained in its normal position by means of a pessary. If the uterus is tied down by firm adhesions, no attempt at reduction should be made; if, however, the adhesions allow a certain degree of mobility, an effort may be made to rupture them if they are only filamentous, or to elongate them by gradual stretching. This may be done in the following manner: a strong uterine sound, of moderate calibre, is introduced up to the fundus, and the index-finger of the left hand placed on the posterior surface of the instrument as closely as possible to the os, while the handle of the instrument is grasped by the right hand. The instrument is then turned around so as to direct the inside of its curve toward the anterior part of the pelvis. By a downward pressure upon the handle as upon a lever, the point of the instrument, and with it the uterine body, is then brought forward until the patient evinces a moderate sense of pain caused by the stretching of the abnormal attachments. In some favorable cases the operator experiences a feeling resembling that of a rupture of tissue, and immediately after he is enabled to feel the fundus uteri in close proximity to the abdominal walls, directly above the symphysis; in other cases less favorable, he is compelled to repeat this manipulation a dozen times or more, before his object is attained. No pessary should be applied before the fundus uteri can be brought sufficiently forward to be felt distinctly in contact with the abdominal

walls. Those most appropriate for this class of cases are Hodge's and Scattergood's.

I do not mean to say, that this procedure will cure retroflexion, its aim being merely by elevating the fundus uteri to prevent an increase of the deformity, and remove in some measure the impediments of circulation caused thereby, which are a fruitful source of catarrh.

In several cases I have observed the disappearance of a marked catarrhal secretion followed by impregnation, after a long period of sterility, resulting from this mode of replacement of the uterine organ, without any further treatment. I have likewise been successful in several cases in which the displacement had not existed for too long a period, by simply replacing the uterus in the aforesaid manner, and leaving it with the sound in an anteflexed position for from half an hour to an hour, the operation being repeated almost daily for weeks.

If catarrh is complicated by true angular anteflexion, unless the latter is very slight, never expect to obtain a radical cure of the catarrh, unless the complication is first rectified. All my attempts in this respect were unsuccessful until I resorted to Emmet's operation of incising the posterior lip of the cervix; in order to straighten the canal and thus provide for a free exit of the catarrhal secretion. Too much praise cannot be bestowed upon this gentleman for the introduction of this invaluable operation into the domain of uterine surgery. Extreme smallness of the external orifice is likewise an impediment to the successful treatment of catarrh, and should be overcome by bilateral inci-

sions previous to the local application of remedies to the mucous membrane of the canal.

A few words in regard to the origin of catarrh may be appropriate before proceeding further. For obvious reasons the practitioner is rarely called upon to treat this affection by local means in unmarried females, although it not unfrequently occurs in tuberculous and chlorotic girls. The larger number of our patients are married females,—either such as have borne children, and in whom the origin of the disease can be traced to childbirth, or such as are sterile,—which latter must be divided into two classes: those who were never pregnant, and those who have miscarried once or several times. I do not know what the experience of others may be, but from what I have seen I am convinced, that the larger number of women who have not been delivered of a living child after a married life of five years or upwards, have been pregnant and miscarried one or more times, some avowedly, others without knowledge of it. To your inquiry whether they have miscarried many reply in the negative; still upon closer examination they confess that once, or in some instances many times, menstruation was retarded and reappeared with intense pain, profuse clots of blood and membranes being expelled, and hemorrhage of longer or shorter duration following, many never having recovered their perfect health from the date of such an event. The result of my researches is that excessive coition in most cases caused the mischief. I am therefore authorized in saying, that, so far as my experience goes, in married females, perhaps nine-tenths

of all uterine catarrhs met with owe their origin either to childbirth or abortion.

The extent of the affection is various. Notwithstanding long duration it may be limited to the cervical canal. The cavity of the body is chiefly affected where flexions or strictures at the inner orifice coexist. An increased capacity of the cavity of the body is usually found in such only as have been pregnant, and must be considered as the result of imperfect involution. Hypertrophy may affect both the body and the cervix, or either of the two independently of the other. Strictures of the inner orifice are of frequent occurrence, and I cannot confirm the observation of those who assert that in cases of catarrh of the mucous membrane of the body, the internal orifice is always found widely open, such in my experience being the exception. The external os also is often reduced to a minimum, either as a sequel of catarrh or from congenital malformation.

There is another complication frequently observed in catarrhs of long standing, which deserves particular mention. I refer to eversion of the cervical mucous membrane resulting from excessive proliferation of connective tissue in the submucous layer of the cervical mucous membrane. The prognosis in these cases is unfavorable in proportion to the extent of the affection. Neither the removal of portions of the prolapsed mucous membrane with the knife, nor the application of the actual cautery were sufficient to relieve this condition, and I cannot remember a single case of this kind in which I was successful in restoring the parts so as to render impregnation possible.

The quantity and quality of the catarrhal secretion I shall not dwell upon. They have been described at length in the various handbooks on uterine pathology and pathological anatomy. Those who would study this subject thoroughly I refer to Tyler Smith's treatise on leucorrhœa and Hennig's work on uterine catarrh, which latter, I am sorry to say, has not yet found a translator, and is therefore only accessible to those conversant with the German language.

I shall now proceed to the description of the mode of treatment which I have finally adopted after a series of experiments made in the course of a practical life.

For the examination of the patient I prefer an arm-chair with a movable back, and having two boards attached to both the anterior angles of the seat for the feet to rest upon.

The chair being reclined as much as appears desirable, the patient is placed in the recumbent position with the extremities well flexed and the knees widely separated. This position affords facilities which no other can give for a careful palpation of the abdomen, which should never be neglected before proceeding to a vaginal examination. Both hands should be used; the index-finger of one being introduced into the vagina, the other depressing the abdominal walls, a thorough search should be made of the region of the uterus and both iliac fossæ. If the abdominal walls be sufficiently relaxed, the hand pressing upon the abdomen can be made to reach the promontory, and in many cases the dimensions of the ovaries can be appreciated with the assistance of the index of the other hand. The uterine

sound is then introduced and a correct measurement made of the depth and capacity of the uterine cavity. By the aid of the sound the uterus is then carried from one side to the other, and forward and backward, in order to ascertain the amount of mobility of the uterine organ.

The adhesions which may be found are various as regards their situation and firmness, those affecting the posterior wall of the uterus being the most frequent. A long experience in this matter has convinced me, that a normal condition of the ligaments and the peritoneum will always allow the fundus uteri to be brought into close contact with the abdominal wall, and that whenever this result cannot be obtained, peritoneal adhesions in Douglas' sac should be diagnosticated.

As regards the speculum to be used, every practitioner has his preferences, and for myself (at the risk of appearing old-fashioned) I confess that I still adhere to the use of the cylindrical glass speculum, both for examinations and operations called for in treating this affection.

The inventive genius of uterine pathologists has exhausted itself in the production of new specula, which, although indispensable in cases where certain operations must be performed within the vagina, are superfluous in the treatment of uterine catarrh. Some of them require the aid of an assistant, and most of them are made of metal which will corrode when brought in contact with certain therapeutical agents. A glass speculum can easily be kept clean, and in private practice the low price of the instrument will enable the patient to procure one for her own exclusive

use. The objection which has been raised, that the introduction of the cylindrical speculum distends the vulvar orifice beyond measure, is not valid. Whatever speculum we select, a certain distention of this orifice is necessary for an accurate inspection of the internal parts. It is not, however, necessary to continue using those of telescopic lengths heretofore employed; the size which I prefer measure from three to four inches in length, and their diameter is chosen variously according to the capacity of the vagina. The cervix having been brought into view (the tenaculum being necessary in cases of extreme anteversion), an exact estimation should be made of the extent of the catarrhal affection and the amount of alteration of tissue which it has produced. To ascertain the former, first carefully wipe out the cervical canal with cotton, and then by means of a long-nozzled syringe draw up the contents of the cavity of the fundus and discharge it into a vessel near at hand. Or, if the internal orifice be sufficiently open, let an injection of warm water be thrown up to the fundus, and not unfrequently large flakes of mucus will be expelled with the returning fluid. If the catarrh is limited to the cervical canal, treatment will be much simplified; but if the entire canal be found in a state of hypersecretion, the topical treatment must be directed to the entire uterine cavity, and here it is necessary to proceed with the utmost caution.

As a preliminary to the subject now following, I shall lay down a few cardinal rules, the result of long and sometimes very painful experience, the non-observance of which is occasionally followed by those accidents

which have caused such a dread of intra-uterine injections in the minds of many.

1st. Avoid all intra-uterine treatment while there is any irritation or inflammation in the peri-uterine tissues, or in the cavity of the body.

2d. Beware of injecting fluids of low temperature into the uterine cavity.

3d. Concentrated solutions should be injected in minute quantities only (from 10 to 20 drops).

4th. The entire permeability of the uterine canal shall be established before the injection is made.

It is not sufficient that the uterine canal be so dilated as to admit the nozzle of a syringe; there must also be ample room to allow the easy return of the fluid, and when large quantities are injected, the amount of force upon the piston must not be so great as to produce a distention of the cavity. Otherwise, even though you inject mere water, severe uterine colic, syncope, and even peri-uterine inflammation may result.

The means at our disposal for the purpose of dilating the uterine canal, with a view to intra-uterine applications, are tents made of sponge, laminaria, or gentian root. The last I have never used, and the laminaria I have almost entirely abandoned on account of the unpleasant accidents which I have experienced in their employment. Very few patients are able to bear their presence more than six hours without suffering intense agony from uterine colic and incessant vomiting. In private practice the physician is not always at hand when these accidents occur, and the tent being firmly impacted within the strictured cervix or internal orifice,

the patient is unable to withdraw it, notwithstanding a string has been attached to it. This unpleasant accident is due to an incomplete expansion of the laminae from rigidity of the internal orifice, and complete distention of that part of it which lies within the uterine cavity. In several instances the tent was dissevered when the patient attempted to remove it by traction on the string, and the remaining portion could only be obtained by the forceps after a painful dilatation of the lower half of the canal. I have therefore returned to the use of the sponge in the majority of those cases in which the application of a tent was deemed proper. However, for the purpose in question, all forms of tents are open to this objection—the dilatation produced by them is only temporary, and their repeated application previous to every injection into the uterine cavity is too laborious and not without danger. To obviate this inconvenience various dilators have lately been introduced, descriptions of which have been given in the medical periodicals.

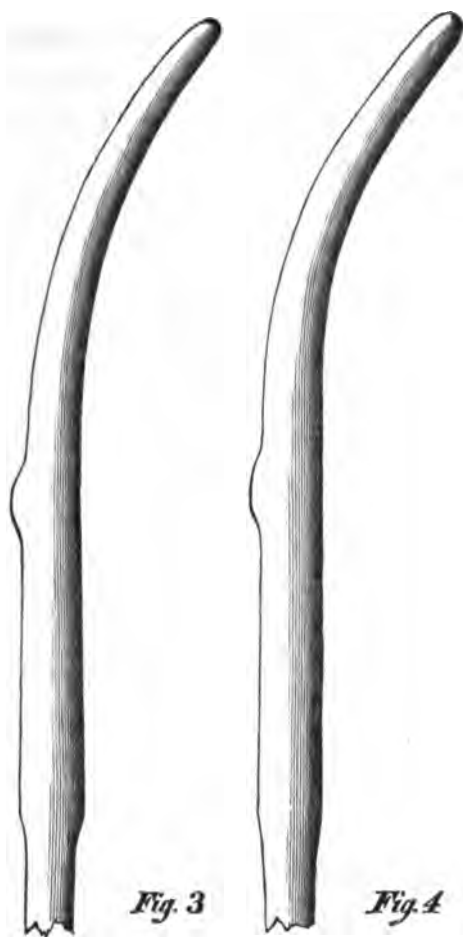
Some years ago I devised for this purpose a set of sounds (Figs. 1, 2, 3, 4, natural size), which daily use has tested to my entire satisfaction, and I shall now give a description of them, hoping that they may be as useful in the hands of others. These sounds, the curved upper extremity of which is exactly rendered in the accompanying wood-cuts, are constructed of copper or German silver, the metallic stem being about eight inches long and provided with a short wooden handle. They are four in number, and each of them has a slight elevation at a point situated two and a half inches from its

extremity; and they are so graduated that, by their successive introduction, the uterine cavity can be dilated with the use of a moderate amount of force. The inter-



nal orifice being the point which offers the greatest resistance to dilatation, particular attention should be paid (in their construction) to their diameter at a point situ-

ated an inch and a quarter from the extremity. Those which I possess measure five, six, seven, and eight millimetres in diameter at this point. The tip of number one



measures three millimetres, and will pass easily after the introduction of an ordinary sound; that of number two, measuring four millimetres, will be admitted with-

out difficulty at the internal orifice after number one has been introduced; the same may be said of number three, which measures five, and of number four, which measures six millimetres at its extremity. Dilation having been accomplished to this extent, intra-uterine injections may be resorted to without risk, and a free exit is given to the secretions accumulated in the canal, provided any flexion in its course has previously been rectified.

These dilators I always introduce through the speculum, each one being gently rotated whilst it is pushed forward. This operation generally causes little pain, except in very sensitive patients. Should the cervical canal be so narrow that the introduction of these instruments causes much distress, it will be necessary to precede their use by that of the sponge-tent or the knife, which is, however, in my experience, an exceptional requisite.

The uterus having thus been prepared for the reception of topical remedies, I generally commence with a few copious injections of warm water, which are made with the india-rubber long-nozzled syringe already mentioned.

The syringe is filled twice or three times in succession, introduced nearly up to the fundus, and the whole uterine canal thoroughly cleansed of its secretions. Whatever topical remedies are then judged appropriate, are applied to the uterine canal, either in substance if solid, or, if liquid, by means of the same syringe, or a small brush.

The remedies which we employ to arrest the hypersecretions of the mucous membrane belong to the class

of the caustics and astringents. As every practitioner has his preferences in this respect, and it is not my intention in this paper to speak of anything but the results of my own experience, I shall not be expected to review all the remedial agents which have been employed in the treatment of the pathological condition which is the subject of this essay. As regards the form of their application, I may state that at an early period I abandoned the use of pulverized substances, ointments, and medicated crayons; the first, because they cannot be uniformly applied to the whole uterine cavity, and both the latter because they are generally expelled by uterine contractions immediately after their introduction. The local remedies to which I have given the preference may be classified under three heads:

1st. The actual cautery.

2d. Solid substances.

3d. Liquids.

1st. The actual cautery.—This energetic remedy,—the advantage of which has been tested by all the leading gynecologists,—is superior to all other caustics in the treatment of large eroded surfaces, or soft spongy granulations existing on the vaginal portion, and chiefly so when the cervix is much enlarged and indurated, or where the mucous membrane of the cervical canal has been considerably everted from proliferation of its submucous layer.

2d. Solid substances.—Of all the substances formerly used belonging to this class, there is none now generally employed except nitrate of silver. It has lately been somewhat brought into discredit by the accusation that

it produces induration of the cervix; but allowing that we find such induration in cases where nitrate of silver has been extensively used, where is the proof that this induration has been produced by the remedy in question? Is it not daily employed in other parts of the human body, with the most beneficial effect, and without having any alteration of tissue? Do we not frequently meet with indurated cervices which have never been the subject of any local treatment whatever, and wherein does the action of other escharotics differ from that of the nitrate of silver? Hypertrophy and induration are the products of proliferation of the connective tissue, and cicatrization, with all its consequences, is the unavoidable termination of the healing efforts of nature, when the loss of substance has involved the membrane to a considerable depth. We all know that the action of lunar caustic is superficial only, and that where destruction of tissue is necessary, it is an impotent remedy. From this train of reasoning, notwithstanding all the arguments to the contrary, I have not abandoned a remedy which has done me excellent service in many cases where no other local treatment was resorted to. I have, however, restricted the employment of it to the affections of the vaginal portion and the cervical cavity, its application to the body being frequently followed by intense pain and hemorrhage difficult to control.

3d. Liquids.—This form of application has many advantages over all others, the principal one being the facility of graduating the strength of the solution according to the requirements of each individual case.

The remedies I generally use in this form are chromic acid, Lugol's solution of iodine, and carbolic acid; sometimes sulphate of zinc and pyroligneous acid. Of all these I keep a concentrated solution on hand, which is applied either pure or in a diluted form. The concentrated solution of chromic acid consists of chromic acid two parts, water one part, and is chiefly applicable where luxuriant granulations or vegetations are to be destroyed. Lugol's solution, in its concentrated form, consists of iodine one part, iodide of potassium two parts, water four parts; its use is indicated in those cases in which catarrh is combined with hypertrophy of tissue. Carbolic acid dissolved in an equal part of water renders excellent service when applied to eroded surfaces with a tendency to hemorrhage, and the same may be said of pyroligneous acid in its undiluted form. Sulphate of zinc, 10 grs. to 1 oz. of water, is a valuable astringent in those cases of hypersecretion in which no erosions are visible. The weaker solutions are prepared by adding from five to ten parts of water to those above mentioned.

The manner in which these liquids are applied is various. Where the catarrh is confined to the cervical canal and that part of the vaginal portion which surrounds the os, a sufficient quantity to cover the whole vaginal portion may be poured into the speculum and allowed to remain there a few minutes. The penetration of the fluid into the cervical canal is facilitated by the introduction of the sound, and if the uterus be sufficiently depressed it can easily be made to penetrate into the cavity of the body. It is characteristic of

this mode of application, that (no matter how strong the solution) it is never followed by those unpleasant symptoms which are apt to occur after injections with the syringe.

If the seat of the catarrh is at the internal orifice or within the cavity of the uterus, it is necessary to carry the remedies directly to the source of the secretion. Here greater caution is needed. The uterine canal must be fully dilated previous to each application, and if a concentrated solution be applied, it is preferable to do so with a brush, for the introduction of these concentrated substances, notwithstanding the full dilatation of the canal, is immediately followed by energetic uterine contractions, and if too great a quantity has been injected, the liquid imprisoned within the uterine cavity produces intense colic and other unwelcome symptoms. In some instances the tube of the syringe is so firmly held by the internal orifice, that not a drop of liquid can return alongside of it, and a certain amount of force is necessary to withdraw the syringe from the uterine canal. Various means have been resorted to for avoiding this undesirable occurrence. Peculiar syringes and double canulæ have been invented with the intention of preventing the injection of too large a quantity of liquid or to facilitate its outflow. They are, to say the least, unnecessary, as the operator is enabled to inject no more than the uterine cavity will hold, by first pouring the quantity which he intends to inject into a glass and then filling the syringe. Although I have followed this practice daily for many years, I have never had a fatal case to deplore; and when accidents

have occurred, which has occasionally happened, it was owing to a departure from, or imperfect observance of the rules which I have laid down for my own guidance. From 10 to 20 drops I consider to be the maximum that can be safely injected of any of the first three concentrated solutions above mentioned.

The effect is essentially different when weak solutions are chosen. The whole contents of the syringe (from two to three ounces) may be injected, the greater part of which immediately returns by the side of the canula if the uterine canal has been fully dilated, and these injections are followed by no reaction whatever, especially if the injected fluid has been warmed to a certain temperature.

The interval between the applications to the uterine cavity should be from three to eight days, varying of course according to the degree of irritation produced. I have frequently made injections daily for several weeks, only weak solutions being used. The accident oftenest occurring after this mode of application is uterine hemorrhage, never to an alarming extent, and generally yielding to the local application of styptics, among which I give the preference to the persulphate and the perchloride of iron.

The choice of the topical remedy which is to be applied to the mucous membrane of the uterus is a matter of some importance. Pathological anatomy teaches us, that when the ciliary epithelium which forms its inner lining, has been cast off during the disease of which we are speaking, it is replaced by cylindrical epithelium, and, where the loss of substance is still

greater, by polymorphous cells. It is natural to infer that, if a large extent of the mucous membrane is denuded of its ciliary epithelium, the onward progress of the spermatozoids may be impeded, and thus a new cause of sterility be brought about to which hitherto very little attention has been paid. It is therefore important to avoid the use of all those remedies the action of which is escharotic. It is claimed for the chromic acid and the compound solution of iodine that they will not affect healthy tissue. My experience confirms this assertion, as I have repeatedly injected these concentrated solutions into the uterine cavity of patients suffering from catarrh, who were thereby cured of their catarrh as well as of their sterile condition. Still it may be prudent in ordinary cases to choose the safer way of using diluted solutions only, to prevent exfoliation of the delicate fabric of the uterine epithelium.

Intra-uterine injections have been in use from time immemorial until now; still the opinions of authors as regards their admissibility are extremely varied, as may be seen from the perusal of a historical review of the subject extracted from Cohnstein's treatise on chronic metritis which I translated for the Feb., 1869, number of this Journal. My attention was chiefly called to their importance twenty years ago by the remarks of Kiwisch on this subject, in his work on gynecology. I have therefore no claim to originality in their application; my intention was simply to prove their harmlessness if executed with the necessary caution, and to render them more available by devising

new means for the dilatation of the uterine canal. The odium still attached to their use will disappear if we succeed in establishing rules insuring their safety; and although we allow, that accidents may occasionally occur notwithstanding the most careful observance of these rules, let us not forget, that such has been the case after all surgical operations performed on the uterus, the simple application of the uterine sound not excepted, and that the amount of risk incurred is commensurate to the advantage to be obtained.

A CASE OF INVERSION OF THE UTERUS, OCCURRING AFTER
THE CLIMACTERIC PERIOD, FROM A FIBRO-CYSTIC TUMOR
SITUATED AT THE FUNDUS.

BY THOMAS ADDIS EMMET, M.D.,
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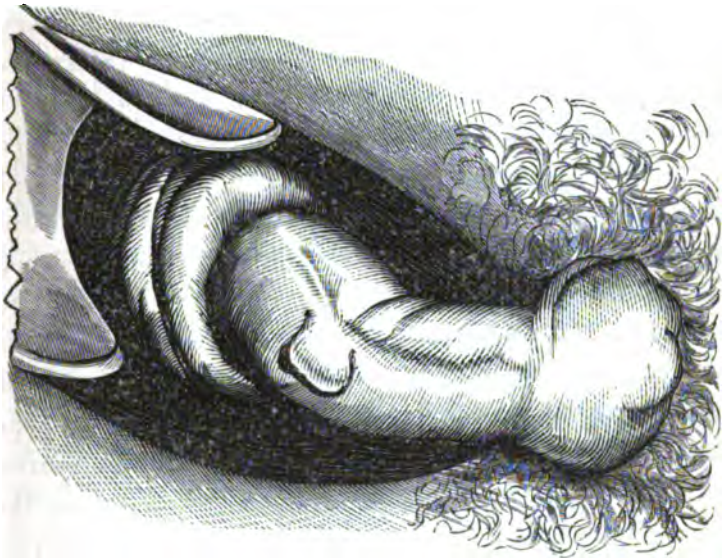
(Read before the New York Obstetrical Society, May 4th, 1869.)

MRS. R. CONKLIN, aged 54, a native of the United States, was admitted to the Woman's Hospital from Babylon, Long Island, April 19th, 1869, with the following history:—Her general health during childhood had been delicate, and at the approach of a retarded puberty she suffered from frequent attacks of fainting, with great nervous prostration. She menstruated for the first time at 18, but never became regular. It was her impression that the flow had been from the first unusually painful, too frequent and profuse. She married at thirty-five and remained sterile. During her married life the menstrual flow became more painful and irreg-

ular, while frequently she was not free from a *show* for more than three or four days in each month. During the same period, until a change of life took place at the age of fifty, she suffered almost constantly from a dragging pain in the back and about the hips. After the menstrual cessation her general health improved, and continued to do so for two years. During February, 1867, she contracted a severe cold, and while in the midst of a paroxysm of coughing, she suddenly experienced a feeling of great discomfort in the vagina, accompanied by pain in the back and hips, which could not be localized. Her sufferings became so urgent that she was obliged to seek relief from her physician. A vaginal examination was not, however, deemed necessary; but, from the symptoms, her sufferings were attributed to "falling of the womb," for which the recumbent position and astringent injections were prescribed. As she did not obtain relief by these means, she made a digital examination, and found the vagina obstructed near the outlet by a mass which was not there a short time previous. She remained an invalid, unable to stand or exercise, with frequently a profuse vaginal discharge, for fourteen months previous to her admission to the hospital.

On examination, the uterus was found inverted, with a fibro-cystic tumor situated at the fundus, which presented just within the labia. As will be seen by reference to the plate, the uterus was completely inverted on the left, while on the other side the line of the shortened cervix was defined by a shallow crescentic-shaped sulcus. The uterus was an inch and three-quarters in

length, from the bottom of this fold to the attachment of the tumor at the fundus. The tumor was as large as a pigeon's egg, but had evidently undergone a reduction in size from cystic degeneration. Several large cysts existing within the mass were prominent, while on the surface several cicatricial depressions were detected



at which others had been emptied of their contents, and by so doing had materially lessened the size of the tumor. The mucous surface of the uterus was of a pale color, presenting in fact the same appearance as that of the vagina, and did not bleed on handling. The arborescent appearance of its surface was well marked, and on the right side the shrivelled remains of a mucous polypus existed (*see plate*). The diagnosis, as to the condition of the uterus, was proved by passing the index-finger into the rectum so as to approximate the extremity of a sound felt within the bladder at a point just above the

mass in the vagina, it being evident at the same time that nothing in size existed above the plane of the vaginal junction which could be mistaken for the body of the uterus.

May 4th.—A consultation was called, ether was administered, and the condition verified by Dr. George T. Elliot, one of the consulting surgeons, and by Doctors J. C. Nott, Trask, Foster Swift, John G. Perry, and others present. The *écraseur* was applied, and the tumor removed from the fundus with but little bleeding afterward. It was then determined to introduce the hand into the vagina and to reduce the inversion by the method proposed by me several years since, and already successfully practised in several instances reported afterwards. It was found, however, impossible to introduce the hand, as the patient was obese, with a short and narrow vagina existing after a change of life. The uterus was therefore drawn down to the vulva, and the organ steadied by seizing the edge of the cervix on each side, with a tenaculum held by an assistant. With the uterus thus fixed, a portion in advance of the vaginal junction was grasped between the thumb and fore-finger of the right hand, while a steady upward pressure was made until the os uteri became well defined. The cervix was then dilated by passing the index-finger around at the bottom of the sulcus, between the neck and inverted body of the uterus, while at the same time a steady upward pressure was maintained by the finger. Just in proportion as the cervix was thus dilated at the seat of inversion, its transverse diameter increased, and the long diameter of the uterus became lessened as the

reduction advanced. When the fore-finger became fatigued, the body was seized with the fingers, as in the beginning, and the upward pressure exerted, while the index-finger of the other hand was passed into the rectum behind the organ to relieve the strain on the tenacula held by the assistants, which were frequently tearing out. In three-quarters of an hour the fundus passed within the os uteri. After persevering an hour longer, it had advanced above the plane of the vaginal junction, so that a sound could be passed within the cavity a little over an inch. From this time no advance was made, and attributing it to the fact that my fingers had become too cramped for effective service, I obtained Dr. Elliot's aid, but without his being able to make any apparent change. It now became evident that the attempt at further reduction had to be abandoned, from the condition of the patient, and the certainty of adhesions, as suggested by Dr. Nott. This view was strengthened after a careful digital examination per rectum. It was found, that the depression which had been felt at the seat of inversion before attempting the reduction, had nearly disappeared, while in fact it should have been enlarged as the reduction was advanced. Although the exact condition could not be defined, Dr. Nott's explanation seemed to be the true one, that some portion of the broad ligament had become adherent on both sides, and when the reduction had advanced so far as to roll out these surfaces to a certain point, no farther advance could be made unless a separation could be brought about on one side at least. The patient had been suffering from a catarrh previous to the operation, so that it became

necessary in addition to desist in consequence of great irritability of the air-passages produced by so long a continuance of the ether. As in a similar case, where adhesions existed and the procedure had proved successful in stripping them off, I introduced three deep interrupted silver sutures into the cervix. On twisting these, the sides of the os in the middle were brought together over the fundus. By this means a steady upward pressure was maintained against the fundus, while a force in addition was exerted on the outside of the organ tending to pull open the parts above at the seat of inversion. The exercise of these two forces thus steadily kept up, was calculated to gradually overcome any adhesions which were not of too firm a character, while by thus securing the advance already made, the reduction could be again attempted under more favorable circumstances if deemed advisable. She reacted badly from the effects of the ether, with vomiting afterward, and suffered from a severe attack of bronchitis. On the seventh day the sutures were removed, and, as the general condition of the patient would not admit of farther interference, no attempt was made to complete the reduction. The fundus still remained within the canal after the withdrawal of the sutures, but as she was suffering from a frequent cough it was fully expected that the inversion would again become complete. On the 21st day after the operation she returned home to recruit, but before doing so an examination was made, when it was found to my surprise and satisfaction that no descent of the fundus had taken place.

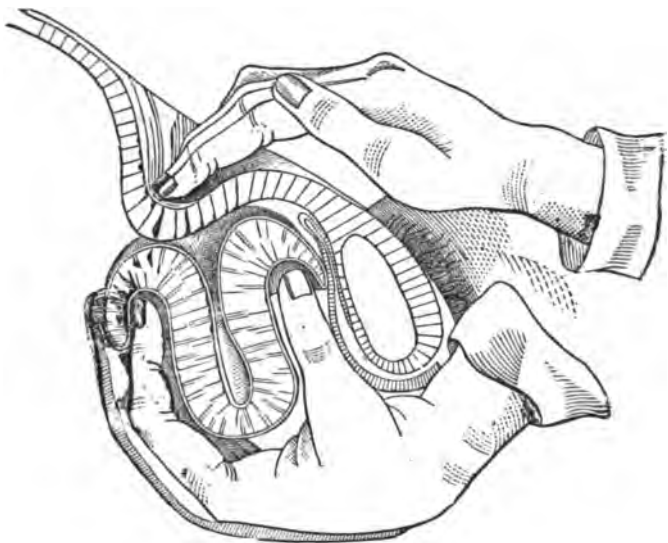
June 15th.—She returned to the hospital, having

fully recovered her health, and able to walk and stand without the least inconvenience.

June 18th.—In the presence of Drs. Nott, Trask, Prof. Davis of the University of Virginia, and others, I denuded a portion of the inner face of the os uteri, and, after introducing three deep interrupted silver sutures, brought the sides together in the centre, leaving the line open at each extremity. Although the fundus had not descended, and the canal remained of the same depth as after the attempt at reduction had been abandoned, it was decided best to partially close the os for fear that by accident the inversion might be again produced. It was not deemed necessary to make a second attempt at the reduction, from the fact that the existence of firm adhesions seemed proved by the fundus remaining in the same position, after the support given by the sutures had been withdrawn. In addition, her age did not make it so necessary to persevere, while she was unwilling to take ether again, and without its influence but little could be accomplished. The sutures were removed on the eighth day, the union was found perfect, and shortly afterwards she was discharged from the hospital.

In the January (1866) number of the American Journal of Medical Sciences, Philadelphia, I reported my first case reduced, Oct. 10th, 1865, by a mode resorted to by me after all other methods had failed. It consisted in passing the hand within the vagina, and while the fundus rested in the palm, the five fingers were made to encircle the portion within the cervix, as near as possible to the seat of inversion. While the

portion was thus firmly grasped, it was pushed upward, and the fingers were immediately afterward expanded to their utmost. This manipulation, with the aid of the other hand over the abdomen, as will be described hereafter, was persevered in until the fundus had passed within the os uteri (the following plate represents the procedure). The advance gained was in pro-



portion to the amount of dilatation accomplished by spreading the fingers, thus increasing the transverse diameter of the uterus, while the long diameter of the organ became shortened in the same ratio. When the reduction had so far advanced that the fingers could not be passed fully up to the seat of inversion, steady pressure was applied to the fundus by means of the tips joined together, while an increased effort was made with the other hand to roll out the parts above by slid-

ing the abdominal parietes over the edge of the ring near the seat of inversion, as shown by the diagram.

In the number for April, 1866, of the same Journal, I reported a second case successfully reduced by the same method.

In the January number of the same Journal for 1868, I presented a third case, with a review of the preceding ones. The history of the latter case has an intimate connection with the one under consideration, from the existence of adhesions of one of the broad ligaments, which were gradually removed by the double force exerted on closing the os over the fundus by temporary sutures. The adhesions were separated, and after the withdrawal of the sutures, the reduction was completed in a few moments when a continued effort of several hours had failed in accomplishing it a week previous. By bringing about a firm union of a portion of the os, so as to effectually prevent the descent of the fundus, where the reduction has failed, I put in practice what I proposed in the history of the third case, as a procedure to be resorted to, instead of removing a portion of the organ by means of the *écraseur*.

(In connection with Dr. Emmet's case, we append the following from the minutes of the N. Y. Obstetrical Society, at which it was discussed.—*Eds.*)

"In the discussion which followed the reading of the above paper the question was asked, whether a uterus which had never been extended and relaxed by a previous gestation could be possibly inverted by a tumor of such small size and softness of tissue as the one described. Dr. Noeggerath reminded the Society of the fact, that a diseased uterus might

gradually lose its tonicity to such a degree as to pass into a state of what is called chronic inversion, even without the presence of a polypus attached to the fundus. The first degree of this anomaly has been fully described by Dr. Rigby as "squatted uterus." The specimen presented exhibited, even on superficial examination, traces of diseased utricular glands. Cases of *cystic* polypi starting from the fundus are rare, while they are the rule in polypi originating below the inner os. But, whenever the former are observed, they are very rarely unaccompanied by disease of part or the whole of the utricular glands dispersed along the entire uterine cavity. This form of endometritis *chronica cystica*, in which numerous bead-like cysts are formed along the mucous membrane of the body, has been first thoroughly described by E. Wagner (*Archiv für physiol. Heilkunde*, 1855, p. 289), and is mentioned in Virchow's work on Tumors (*Krankhafte Geschwulste*, B. I., p. 242). The effect of a general growth of the utricular glands must tell considerably on the tissue of the uterus proper, since they penetrate deeply into the submucous and to some extent into the most superficial muscular layers.

This general and enormous development of the utricular glands must affect the uterine tissue proper in such a manner as to bring about atrophy of its fibres and loss of tone. Prof. Rokitsansky has called attention to this fact many years ago in an article discussing the pathogenesis of flexions. He there stated, in opposition to the views of Virchow, that the cause of flexions had to be sought for not so much in peri-uterine affections, as in a softening of the firm elastic tissue just above the inner os, in consequence of a development and increase in size of the uterine glands embedded within the same. Dr. Noeggerath was of the opinion, therefore, that the inversion in this instance was due, principally, to a general relaxation of the uterine fibres, from pressure of the unduly developed utricular glands. Dr. Emmet coincided in this opinion, and stated that there had existed quite a number of glandular cysts in the uterus itself, some of which he had emptied out by pressure after the removal of the tumor.

The tumor was examined by Dr. Noeggerath. It measured $1\frac{1}{2}$ of an inch in length, was $\frac{1}{4}$ inch thick, and 1 inch wide. The mass was of an irregular ovoid shape, covered with a smooth shining membrane which showed numerous small cysts underneath, from the size of a lentil to that of a large pea. On being cut open, the entire mass was found to consist of an agglomeration of true mucous cysts, into some of which a hemorrhage had taken place. The mucus was thick and tenacious, just as we find it in cases of glandular hypertrophy of the neck. It contained nothing but mucous corpuscles, numerous epithelial cells, and a few large round granulating cells. The walls of the several cysts, and the tissue sparsely interspersed between them, consisted chiefly of bundles of thin, waxy cellular and elastic tissue, which contained in some sections quite a large amount of muscular fibres.

The exact counterpart of Dr. Emmet's case is described in H. McClintock's *Clinical Memoirs on Diseases of Women*, p. 97:—
"The woman was 66 years of age, she was never married, and her changes ceased about 15 years ago. Her health has always been good, and prior to her present complaint she never had hemorrhage, leucorrhœa, nor any other symptom of uterine disease. Six weeks before her admission into the Lying-in Hospital, when actively engaged scrubbing a floor, she felt sick at her stomach, and during a violent fit of vomiting which ensued, the tumor was suddenly extruded from the vagina accompanied by the discharge of some blood. A medical man saw her, and replaced the tumor within the vagina, but it soon prolapsed again. Protruding from the vulva was a red fleshy tumor, the extreme length of which was very close on 7 inches. The thickest part was the first 3 inches, then there was a partial constriction, or slight indentation of the tumor, which was terminated by a pediculated fibrous growth the size of a chestnut. The first $2\frac{1}{2}$ or 3 inches—that is, from the vulva to the circular furrow or indentation—consisted of everted vagina. The portion intervening between this and the polypus was small in circumference, and its surface was entirely moist. This latter section was considered

to be the inverted uterus, and this was confirmed by finding the openings of the Fallopian tubes. Dr. Denham removed the polypus by *écrasement*. The inverted uterus was also removed by the *écraseur*, after a ligature of whip-cord had been tightened around it, 3 days previous to its removal. The patient made a full recovery."

In most of the cases of a similar nature that have been described, the tumor was of much larger size than that removed by Dr. Emmet and Dr. M'Clintock, and in most instances the women had given birth to one or more children.

MALIGNANT DISEASE OF THE NECK OF THE UTERUS—ITS DIAGNOSIS AND TREATMENT

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THE many difficulties which are encountered in diagnosing the various forms of malignant uterine diseases in their incipency, excites diffidence in expressing positive opinions regarding them, but the great importance of being able to detect cancerous disease of the neck of the uterus before it extends beyond the reach of effectual treatment, prompts me to give here a few observations on its diagnosis and treatment.

I have had an opportunity of watching the development of malignant disease in several cases which came under my observation and treatment for what at first appeared to be only benign disease of the uterine neck. In those cases, the cancerous disease commenced before the cessation of menstruation, and was preceded or ac-

accompanied by congestion of the uterine neck with leucorrhœa, and hence presented the difficulties of diagnosis which occur when benign and malignant disease coexist. In such cases of benign disease with a tendency to malignancy, the leucorrhœal discharge, although the same in character as in ordinary inflammation of the cervical canal, is much more profuse and persistent, being but little if any affected by the usual treatment, which in other cases is prompt and efficient.

The diffuse redness, indicative of congestion, is generally observed to be more intense at the point where the malignant disease is commenced; and when there is general loss of epithelium around the os uteri the papillæ are more prominent and of a deeper red at the same point. In addition to these, there is usually circumscribed induration, more or less marked. There is also a decided tendency in such cases to menorrhagia.

What I consider to be the most important diagnostic feature in those cases, and to which I desire to call special attention, is the marked obstinacy to yield to treatment. The persistent employment of the most appropriate remedies, while they will relieve the general congestion, fail to make any impression on the portion involved in the malignant disease. I have repeatedly seen the general congestion relieved, and the lost epithelium restored, excepting at the point of malignant disease, where the congestion lingered, and indeed increased in opposition to all means employed for its arrest. This resistance of the circumscribed portion of the uterine neck to treatment which is always effectual in relieving benign disease, is quite sufficient to excite suspicion that

the disease is malignant in character, and to confirm the diagnosis, it is only necessary to remove a small section of the indurated portion and examine it under the microscope. If the disease is of the true cancerous nature, the characteristic heteroplastic tissue can usually be discovered, and if it should be epithelioma, the superabundance of epithelial cells will be valuable testimony as to its malignant character.

By attention to these few points, I believe that we can diagnosticate malignant disease with a tolerable degree of certainty at a very early stage of its development. The accomplishment of this object I conceive to be of vital importance, because, to treat malignant disease of the neck of the uterus effectually, it is absolutely necessary to recognize the trouble early; and in those cases where benign disease exists at the same time, the malignant element is very liable to be overlooked, at least for a time.

This statement applies to cases where malignant disease commences before the change of life, for then, according to one of the laws of pathology, we have not the same reason to suspect its occurrence as afterwards. I believe, however, that cancer of the neck of the uterus not unfrequently commences near the period of cessation of menstruation, although it may not present its peculiar characteristics in a very marked degree until later.

When the disease does not commence until after the change of life, it is much more easily diagnosed. The appearance of disease of the neck of the uterus after the close of its active functional life is sufficient to awaken suspicion of malignancy, and if we find, on

physical examination, an indurated portion with well-marked circumscribed congestion, a portion should be removed for microscopic examination, which, in most cases, will decide the diagnosis.

The earlier we can make a diagnosis, the easier and more effectual the treatment will be. The recognized indications for treatment are, to remove or destroy entirely the diseased portion, no matter what the variety of cancer may be. If it is scirrhus, we can arrest its progress for a time. If it is epithelioma, we may entirely cure the patient.

Among the operations recommended and practised for the removal of cancer are—amputation of the neck by the *écraseur*, the scissors, knife, or the wire heated by the electric currents, and the destruction of the part by actual cautery, acid nitrate of mercury, potassa cum calce, or any strong caustic.

Now, while it must be admitted that all of those means of operating are valuable, they present more or less objections. In using the *écraseur* it is difficult to remove that portion which we desire, and that only. If we make sure of going above the diseased portion, we may remove more than is necessary. The difficulties of manipulating with the knife or scissors, and the consequent hemorrhage, give rise to similar objections, and by this mode of operating we frequently have hemorrhage which is difficult to arrest. The actual cautery, and the various caustics, do not always destroy the whole of the diseased part; and there is also great danger of destruction to the healthy surrounding parts. And to all these modes of operating, excepting perhaps

with the *écraseur*, there is the objection that a large portion is left to heal by granulation, which necessitates confinement of the patient to bed, with a constant tendency to hemorrhage, and the formation of large cicatrices which may remain for a long time tender and painful.

Having observed the objections to those modes of operating, I was ready to lay hold of any means which promised to answer a better purpose. Fortunately I noticed an article in the British Medical Journal for September 19, 1868, by Dr. J. R. Wolf, Ophthalmic Surgeon to the Aberdeen Royal Infirmary, on the use of caustic "*arrows*" and carbolic acid in the treatment of malignant disease. The very excellent results obtained by him in treating cancer of the face led me to believe that the same means might be employed in malignant diseases of the uterus. The arrows which he employs are prepared by dissolving chloride of zinc in a little water, making a saturated solution, and mixing it with a sufficient amount of starch to make a stiff paste, which is rolled into a thin cake, cut into shape, and dried by heat at 112 degrees F. He then makes a number of openings with a lancet in the healthy tissue surrounding the margin of the diseased part into which the arrows are introduced. One arrow is also put into the centre. He protects the surrounding parts by a patch of leather having an opening cut in its centre of sufficient size to embrace the tumor. The whole is then covered by a compress of dry lint and bandaged. When the slough is formed it is separated by an ordinary poultice, and the healthy surface left is dressed with

carbolized wadding dipped in glycerine, the dressing being renewed every second day, when the parts are washed with a weak solution of carbolic acid. In employing this treatment in disease of the neck of the uterus certain modifications become necessary, as will be noticed hereafter. Perhaps I can best illustrate the points introduced in the diagnosis and treatment of this class of disease by giving the history of two cases occurring in my practice.

CASE I.—Catherine A., aged 35, came to the hospital August 13, 1867, when the following history was obtained: She had been married ten years, and had one miscarriage at the third month soon after marriage, but had never been pregnant since. Stated that her menses had always been regular and natural, and that she had enjoyed good health until the last three years, when she began to suffer from uterine leucorrhœa, pain in her back, and general debility, and occasional pain in the iliac regions. Had no urinary trouble, nor any symptoms of displacement of the uterus. The leucorrhœa, at first slight, had become exceedingly abundant. Her appetite was good and her bowels regular.

She had been under the treatment of one physician of this city for three months, who made several applications to the uterus, and employed a variety of injections, from all of which she derived no special benefit. She then placed herself under the care of another physician for about four months, who told her that she had ulceration of the uterus, and treated her locally until, as he said, she was cured. But her symptoms remained

about the same except that she gained a little in strength. By speculum examination there was observed congestion and enlargement of the neck of the uterus. The mucous membrane surrounding the os was denuded of its epithelium, and presented the appearance of a granulating ulcer; there was profuse uterine leucorrhœa. By a digital examination the lips of the os uteri appeared to be slightly indurated, and there was well-marked hyperæsthesia. The local treatment then employed was free scarification of the os uteri, and several punctures made in the neck around the os. She was then directed to use injections of warm water, and a vegetable and iron tonic prescribed.

This form of treatment, consisting of free depletion by scarification, and leeches occasionally, with warm water and borax injections, was continued at intervals of about a week, with the addition of tonics, good nourishment, open air, and everything that could contribute to improve the general health, until Jan. 1st, 1868. During that time she had very much improved in her general health. The congestion of the uterus had mostly disappeared; the epithelium was restored to the mucous membrane around the os, excepting on the anterior lip, where there remained a circumscribed congestion and a raw looking surface which bled easily when touched. The leucorrhœa remained as profuse as ever.

Up to this date the case had been looked upon as one of ordinary benign disease of the uterus, but the fact that the improvement was much less than what is usually obtained by such treatment, some malignant disease be-

gan to be suspected. Chromic acid was then thoroughly applied to the whole extent of the cervical mucous membrane, in the hope of arresting the diseased action going on there. But little effect was noticed from this application beyond its having excited some slight inflammation. Scarification was again employed about the 25th of January, which relieved the congestion and irritation produced by the chromic acid. The same treatment was continued with the addition of the application of a strong solution of nitrate of silver to the cervical canal, until March 18. The leucorrhœa continued the same, and the anterior lip remained congested and indurated. Acid nitrate of mercury was then freely applied to the indurated portion with the effect of producing a very slight slough. It was repeated again about the 3d of April, but no apparent benefit having been derived from its use by the 18th of April it was discontinued. The mucous membrane of the cervical canal was then freely scarified, and one week after solid nitrate of silver was thoroughly applied. Scarification and the application of a strong solution of nitrate of silver were employed alternately until August 11, with the effect of lessening the leucorrhœal discharge considerably, but by no means arresting it entirely. Up to this time her general health had remained tolerably good, but, owing to some domestic trouble, she began to suffer from loss of appetite and general debility. The local treatment, which up to this time had been attended with but little success, was abandoned, and every effort made to improve her general condition. By October 1st she had very much improved in general health, but

the leucorrhœa meanwhile had remained profuse. An examination made then revealed the fact that the induration of the anterior lip had extended slightly, and presented a much more congested appearance, and was covered with highly congested looking granulations. Malignant disease was then more strongly suspected. The general congestion of the neck had returned slightly. A tolerably free incision was then made through the indurated portion in the hope that, by dividing the vessels, the morbid process might be held in check for a time. An occasional scarification alternated with the application of nitrate of silver was continued until the end of December.

The only beneficial result which appeared to follow this treatment was that it prevented the congestion from extending and kept the leucorrhœal discharge slightly in check.

By January 2d, 1869, I became fully convinced that the disease was malignant in character, from the very fact that I had never seen a case of benign disease resist, to anything like the same extent, the treatment employed. An occasional application of caustic was all the local treatment used during the remaining portion of January. About the 1st of February she was attacked with profuse menorrhagia which lasted for two days. When I was sent for, to see her at home, I found that she had lost a great amount of blood, and consequently was exceedingly weak, so much so that she fainted when making the slightest effort to raise her head. She was so pale and her pulse so very feeble that I thought it best to make some effort to arrest the hemorrhage im-

mediately. This I accomplished by injecting a solution of persulphate of iron into the neck of the uterus, and applying a small piece of sponge saturated with the same to the os uteri. This arrested the hemorrhage at once, and her strength was brought up by the use of stimulants. On the 10th of February she had so far recovered as to be able to come to hospital again.

No very material change in the condition of the uterus was then observed. On the 17th I endeavored to remove a section of the anterior lip for the purpose of microscopic examination. The effort to do so was attended with profuse hemorrhage, which I found somewhat difficult to arrest.

The portion removed was examined by the microscope, but I was unable to say positively that I found evidences of true cancer; but, from the superabundance of epithelial cells, I was fully convinced that the case was one of malignant disease, and ventured to make the diagnosis that the case was one of epithelioma. She was directed to come into the hospital, and was admitted on March 4th.

On examination, March 5th, the indurated portion was about $\frac{3}{4}$ of an inch by $\frac{1}{2}$, and extended up into the neck about half an inch. The surface of that portion was covered with papillæ which looked like the exuberant granulations of an ill-conditioned ulcer. Having in readiness a number of caustic arrows prepared according to the direction of Dr. Wolf, the neck of the uterus was exposed by the bivalve speculum, and I proceeded to introduce them. Steadying the neck of the uterus by seizing it with a long forceps, and having a long-handled teno-

tome with a blade set at right angles to the handle, I made a deep puncture in the neck a little above the indurated portion, and taking one of the arrows in the forceps withdrew the knife and thrust the arrow into its track. In this way I introduced three into the neck above the diseased part, and one into the centre. The projecting ends were then cut off close to the mucous membrane. There was very little hemorrhage, and the patient complained of very little pain. A plug of cotton saturated with a mixture of carbolic acid, oil, and glycerine was carefully packed in, around, and in front of the uterus, and the speculum withdrawn. The patient was placed in bed, and kept perfectly quiet for three days before the dressing was disturbed. This was done in presence of Drs. Berge, Wight, Mason, Vickers, and several students of the class.

During the three days after the operation, I was harassed with fears, lest some of the arrows might become displaced and produce serious destruction of the vagina; still I was unwilling to disturb the dressing in order not to interfere with the progress of the case. At the end of the third day the cotton was removed, and, as might be expected, it had none of that foetor which usually attends substances left for any length of time in the vagina. The diseased portion appeared entirely destroyed, leaving a well-defined slough which separated on the fifth day, leaving a healthy granulating surface. This was dressed with cotton saturated with the carbolized oil, which was changed every second day, until the 20th of March, when the parts had almost healed up. What seemed a little peculiar, the arrows produced no slough

above the point of their introduction ; the mark of their upper sides remained in the neck of the uterus when the slough separated, and the part healed without leaving any apparent cicatrix. The patient suffered no pain whatever, except a little for an hour or so after the operation. She slept well, took nourishment freely, and gained in strength. Fifteen days afterwards there was less congestion and far less leucorrhœa than at any time since 1867. She was discharged from the hospital, and returned again on March 31. She had menstruated five days previously, and had then no symptoms whatever, except a very slight leucorrhœa which was treated by caustic to the neck of the uterus. The application was repeated occasionally until May 15th, when I observed that the morbid appearance of the mucous membrane on the anterior lip had returned considerably, indicating, as I thought, that the disease was about to develop again at that point. A solution of chloride of zinc was applied to that part, and it produced a superficial slough. On the 29th of May I introduced a piece of cotton, saturated with chloride of zinc, into the os uteri, and left it there for two days, at which time the suspicious-looking portion had disappeared. She was seen again on the 4th of June, when there was a little congestion and erosion about the os, which appeared to be from the caustic. June 11th, the uterus appeared quite normal, and the patient was in very good health.

CASE II.—Margaret M., aged 41, was treated in the hospital six years ago for uterine disease, and discharged cured. She came under observation again on the 8th of July, 1868, when we learned that she had menSTRU-

ated but once in the last two years. Four months ago she began to suffer from leucorrhœa, which had been gradually increasing, the discharge causing considerable scalding and irritation. Her general health was fair. A speculum examination revealed subacute vaginitis, and induration of both the anterior and posterior lips on the left side. Incipient carcinoma was suspected. Gave borax to be used as an injection, and ordered a laxative tonic. July 31, she reported that she had less trouble from vaginitis and felt better. She was not seen again until February 8th, 1869, when all her symptoms had increased, and she had suffered considerably from pains about the pelvis. The indurated portion was then well defined, and attended with well-marked congestion, while the rest of the neck of the uterus looked normal. There was a sero-purulent discharge which had a foetid odor. A mixture of carbolic acid, glycerine, and water was given for injection. She was admitted to hospital on the 4th of March, when a piece of the diseased part was removed and examined with the microscope by my friend Dr. Wight, who gave it as his opinion that the specimen was malignant in character. On the 5th of March she was submitted to the same treatment as Case I. Owing to the neck of the uterus being very large, there was considerable trouble experienced in getting the arrows into the posterior wall of the neck, and fearing that I had not used a sufficient number of them, I tried to inject the chloride of zinc into the posterior section of the tumor with the hypodermic syringe. This was found to be impracticable, owing to the density of the tissues. The same dress-

ing as before described was used, and left for three days, at which time most if not all of the tumor had sloughed. The slough did not fully separate until the sixth day; there was a healthy surface left, but it was disposed to bleed on being touched. A solution of chloride of zinc was applied, which prevented any further trouble in that way. The dressing of carbolic acid and oil on cotton was continued, and the parts sufficiently healed to admit of her returning home to New York on March 20th. She was seen again on the 27th of March, when the parts had healed, except a few small red points around the os. She suffered no pain at any time during the treatment, and complained only of being confined to bed when she felt sufficiently well to be around. She promised to report if she had any trouble, and as I have not heard from her, I presume she remains well.

From my observations made in the cases presented, I have reason to believe that chloride of zinc acts powerfully to destroy abnormal tissues, while its caustic effects are very slight in healthy tissues. This virtue has been claimed for it by many, and I think justly. I may here state that I found some mechanical difficulties in using the caustic arrows to the uterine neck, but I think that an instrument can be made for introducing them which will make the operation very simple.

The advantages which may be claimed for this mode for the removal of diseased portions of the neck of the uterus are: that the operation is easily performed; that the diseased portion can be completely removed without

injury to any of the healthy tissues or surrounding parts; that it is attended with little if any pain, and there is no risk of dangerous or troublesome hemorrhage; that the parts heal quickly, and without the formation of troublesome cicatrices.

HISTORICAL REMARKS ON OPERATIVE OCCLUSION OF THE
VAGINA, BY THE UNION OF ITS WALLS (KOLPO-
KLEISIS), IN CASES OF INCURABLE VESICO-
VAGINAL FISTULÆ,

WITH REMARKS ON THE PRESENT STATE OF THE OPERATION FOR VESICO-VAGI-
NAL FISTULA IN GERMANY.

A letter to Dr. Nathan Bozeman, of New York,
BY PROFESSOR G. SIMON, OF HEIDELBERG.

(Translated from the Deutsche Klinik, No. 45, 1868, by E. Noeggerath, M.D.)

DEAR DOCTOR—In No. 43 of the New York *Medical Record*, Vol. II., 1867, in the article entitled “VESICO-VAGINAL AND RECTO-VAGINAL FISTULES,” you claim priority with regard to the operation of occlusion of the vagina, which you performed for the first time in 1859, and described in 1860; and you seem to be under the impression that I have committed a plagiarism in my pamphlet of 1862, on “vesico-vaginal fistula.” After mentioning in the article above named your merits in regard to the operation for vesico-vaginal fistula, and that for kolpokleisis, you make the following remarks on page 435:

“In Germany, it is true, Prof. Simon, of Rostock, a few months before I performed my operation, proposed

precisely the same procedure, cross obliteration of the vagina (queere Obliteration der Scheide), and had actually performed the operation twice, though without any success. We have, therefore, no proof of his having ever effected a cure by his procedure prior to the date of my paper. But when we know the kind of cases in which Professor Simon first proposed his operation, there will not be found such a willingness, I imagine, to award him the credit he might otherwise have been entitled to. He tells us that the case which suggested this novel procedure to him, was one in which the vagina was almost in a normal state, and the fistulous opening so small as only to admit the end of the finger, but it was deeply situated in the vagina, and difficult to approach. These were the circumstances which, after several attempts to close the small fistula, we are told, called forth the above expedient, and which fortunately proved equally unsuccessful. I say fortunately, because it was truly so to both patient and reputation of the surgeon; for the latter tells us afterwards that he succeeded in closing the same fistula, and discharged the patient cured,—a result to her infinitely preferable to that of an obliterated vagina, and certainly more in accordance with correct principles of surgery, all must admit. As appears from the date of Simon's article quoted, he did not publish his views until two years after mine appeared, but he makes no mention whatever of my case of operation. I should be disposed to attribute this oversight or neglect to the fact of his having not seen my papers; but the palpable injustice is made manifest by his resort to my plan of

suture, and in the very case, too, upon which he first tried transverse obliteration of the vagina, and failed."

"I will defer saying more at the present time in connection with this operation, as I hope to be able soon to present my views upon it in a different form and with suitable illustrations."

In order to prove to you, dear sir, the *nullity* of your claims to priority, and the incomprehensible shallowness of your accusations, I will not insist upon the fact that your logic is very difficult to understand, according to which you claim the priority of inventing the operation that, from your own expression, has been performed by me, although without success and after an erroneous indication, but *prior to* and in the *same manner* as your operation. Further, I will not insist upon the fact that in this case the obliteration of the vagina was perfectly justified at the time of its performance, and that the operation was unsuccessful on account of certain circumstances mentioned in the history of the case. I will here give a short résumé of the operation, so that the reader may use his own judgment as to how far Dr. Bozeman's remarks are based on facts:—

The patient, Maria Birk, of Wiesbaden, suffered from a vesico-vaginal fistula and a complete prolapse of the rectum. The latter was removed by means of the *écraseur*; the wound healed up and left a broad circular cicatrix in the rectum, about two inches above the sphincter. The fistula, of about the size of a cherry, was located in the left wall of the vagina; it could not be made accessible by means of the instruments which were then in use, and the operation was therefore impracticable. Two attempts to

close the opening were unsuccessful, and severe secondary hemorrhage, as well as symptoms of peritonitis, made me give up any further attempts of closing the fistula, and I resolved to try kolpokleisis to remove the incontinence of urine. At the beginning of August and toward the end of September, of 1858, I performed the operation twice in the anterior section of the vagina. But on each occasion the united parts gave way entirely. It was my impression that the cause of this mishap, which had not occurred after my former operations, had to be sought for in the previous extirpation of the rectum, in consequence of which the posterior wall of the vagina was covered by a broad cicatrix on its rectal surface. This condition could not be remedied, I therefore had to give up my operation. At about that time I received Sims' duck-bill speculum and his paper on silver sutures in surgery, New York, 1858, and I therefore attempted again with its aid, and the knee and elbow position, according to Sims' advice, to close up the fistula. But I failed also on this occasion, because the fistula, although it was well exposed to sight, could not be reached sufficiently with the instruments used in the operation. Now I constructed for this patient the instruments for exposing the fistula which are represented in my paper, published in 1862, and which I have employed ever since in all my operations. With the aid of these the operation could be easily performed, and it was closed up in two operations which were performed with the aid of silk sutures, the patient being placed on her back.

I will now remark that I have performed the cross obliteration of the vagina long before the year 1859, in which you performed the operation for the first time, viz.: in the year 1855, and that I have operated already four times, with more or less success, before the unsuccessful case upon which you have based your claims of priority. If you only had perused my for-

mer writings, or if you had looked over my paper of 1862 with greater care; or if you had been acquainted with handbooks on surgery and gynecology published in Germany, you would never have insisted on your claim, and would have escaped this rebuke.

My first case of kolpoplexis I have published in the year 1856. In No. 35 of the "Deutsche Klinik" of that year, two cases are fully described under the heading "Queerverschluss der Scheide." In 1858 I published another article in the "Monatsschrift für Geburtskunde und Frauenkrankheiten," B. xiii., Heft 2, in which I stated that I had performed the operation of kolpoplexis five times; that I had presented in the preceding year several of my patients at a meeting of "Mittelrheinische Aerzte," and that two of the surgeons present on that occasion, Prof. Wernher and Prof. Roser, had performed the operation according to my method,—the former with perfect, the latter with almost perfect success. You would have found in this article drawings representing the operation and its result, as performed on one of my patients (Mrs. Mergenthaler), who was operated on the 2d of June, 1856.

But you might not only have found the desirable information in my own writing, but also, as I stated above, in all the German hand-books on surgery and gynecology. You would have found there, that kolpoplexis is described as "Queerverschluss der Scheide" under my name, before you ever had the remotest idea of operating in this manner.

With all this data before you, dear Sir, you will have

to relinquish your claim of priority. I will only add, that you might be kind enough to refute your insinuations against me in the same Journal in which you have published it, and that you would in future study German literature with a little more care, before you accuse a German surgeon of plagiarism who occupies a public position, or who enjoys a certain degree of respect among his countrymen. (I have asked Dr. Boze-man by letter to publish a withdrawal of his statements in the *New York Medical Record*, in the spring of 1868. Since my wish has not been complied with, I have thus been forced to carry the discussion on this subject into the public prints myself.)

I do insist on my claims of priority with so much emphasis, because I consider kolpokleisis to be the most important plastic operation of the last decades which had been devised by a single surgeon. The operation for vesico-vaginal fistula itself, by union of the fistulous edges, is, no doubt, in its present perfection and certainty of success, a more important gain than the kolpokleisis, and no doubt the greatest progress of our century in plastic surgery, but it has not been carried to this state of perfection by one single operator, inasmuch as surgeons of different nations have contributed to its success. Only the uranoplastic of Langenbeck, our ingenious countryman, might be compared in its certainty of execution and of immediate success to kolpokleisis, and might even carry off the palm over it, on account of its more frequent application, if the expected gain from it, viz.: the purity of pronounciation, could be secured in all, or in the greatest

number of cases. This result, however, not being obtained in many cases, and only imperfectly in others, kolpoplexis, by which the desired end is always obtained, must be considered the more important operation. This operation which I had invented, after the proposition of Vidal to occlude the vulva and entrance of the vagina for the cure of incontinence of urine, had been proven as useless, has now been performed more than fifty times with the most perfect success, and by it as many patients with incurable losses of part of the bladder have been relieved of the most distressing suffering connected with it, *i.e.*, incontinentia urinæ. I have myself succeeded in getting a complete obliteration in eighteen cases, and every German operator who treats cases of vesico-vaginal fistula can claim one or more successful cases of this operation.

Since kolpoplexis was first invented by me, I have not remained in the position which you, dear Sir, are occupying up to the present time, but I have improved the operation more and more, I have extended its application to all portions of the vagina, I have defined its indications more precisely. While I performed the operation in my first cases only on the lower section of the vagina, and while small, very intractable fistulæ remained not very seldom, small fistulæ of this kind are observed only very exceptionally, and I obliterate according to circumstances in all sections of the vagina, always immediately below the loss of substance; I have even adapted the operation to a fistula located in the roof of the vagina, and occluded only one-half of

the "laquear vaginæ," preserving the full length of the vagina. (See my contributions to plastic surgery, etc., Prag, 1868, page 216.) While at first I considered kolpokleisis only in cases of very extensive loss of substance, I have very much restricted this indication since I have been successful of late in curing even the largest openings in the bladder by Ω , T , Λ , λ shaped coaptation of the edges by means of lateral incisions, and even by transplantation from the vesico-vaginal septum. I have, therefore, no longer employed the operation of kolpokleisis on account of the large size of the deficiency during the last five or six years, but among a large number of difficult and complicated cases, I found a great many where the reunion of the fistulous edges was impossible or too dangerous, and which were treated therefore by kolpokleisis. (See indications for kolpokleisis in my contributions, etc., page 229.)

So much with regard to kolpokleisis.

I take this occasion to inform you and your countrymen on the progress which the operation for vesico-vaginal fistula has made in Germany, since in this matter also a good deal might be unknown to you. My remarks will be certainly of the greatest interest for you, the experienced operator for vesico-vaginal fistula, inasmuch as the operation in question has been thoroughly known and practised in Germany before your and Sims' appearance in England and France, inasmuch as it has reached here a state of simplicity, perfection, and certainty of success, as is observed in no other country, inasmuch as your American method and its modifications

have been perfected in every respect. I do not hesitate to state that I consider myself the one who has more than any other surgeon practised the operation and contributed to its perfection. (The author mentions the headings of several articles pertaining to improved methods of operating published in Germany, (N).) You will, therefore, find it natural that I should speak principally on my own method and my success. When you had succeeded in 1858 to cure a number of cases in England and France without the lateral incisions of Jobert, merely by the coaptation of the edges, yourself, as well as Dr. Marion Sims, the inventor of the metallic suture and the duck-bill speculum, produced a wide-spread enthusiasm among the first authorities of these countries; and the silver suture, to which the happy results were generally attributed, and which Sims had proclaimed as one of the greatest inventions of the 19th century before the N. Y. Academy of Medicine, was adopted generally throughout Europe, only in Germany we did not share in the general enthusiasm. Quite a number of successes had already been obtained here by myself and other surgeons with the aid of silk sutures and the simple coaptation of the edges,* and I had already made known the principles for the guide of curing fistulæ, according to which its success depended not so much on the nature

* *Dieffenbach* and *Wutzer* had operated successfully already in 1830-40; after this quite a number of successful operations were reported since 1852, which were augmented every year with the increased number of operators. Dr. *Tanner* (1852), myself (1854, '56, '58), *Roser* (1854), *Esmarch* (1857) have published their operations before *Bozeman's* arrival in Europe; afterwards our number was enlarged by *Ulrich*, *Wilnes*, *Wagner* of Königsberg, *Spiegelberg*, *Heger*, and others.

of the material employed in the suture, but rather, as is the case with all other similar plastic operations, only on a sufficient paring of the edges and careful reunion. I have experimented on animals and the human species at the same time with the metallic suture and sutures made of other material, silk especially, and had employed them repeatedly in operations for vesico-vaginal fistula, cleft palate, hair-lip, rupture of the perinæum, etc., and I have found that, far from being the *conditio sine quâ* non of an union by the first intention (as proclaimed by Dr. Sims), they have no advantage over fine silk, but that, on the other hand, their application in opposition to that of fine silk renders the operations difficult and unnecessarily protracted. I therefore pronounced the metallic suture a fancy of temporary value already in 1862 (see my pamphlet, p. 88), notwithstanding the applause of the N. Y. Academy of Medicine, notwithstanding the overflowing praise which the invention received from the greatest authorities in England and France; I even not only consider it no progress, but rather disadvantageous on account of the difficult application and removal of the sutures, and I have not the least doubt that the time is not far distant when the metallic suture for plastic operations, and especially for that of vesico-vaginal fistula, will yield again to the more convenient sutures made of fine silk.*

* In order not to be misunderstood, I here state that I do not consider the silver suture less conducive to the cure of vesico-vaginal fistula than silk; I only contend that fine well-twisted silk is in no way inferior to silver sutures (not even for a longer sojourn in the tissue), and that it is even preferable on account of its application. Any one who does not mind complications and

Of the highly extolled Sims' or American method it is only the duck-bill speculum which I have hailed as a real progress, inasmuch as it contributed to the more exact performance of the operation than the instruments hitherto employed. But it soon became evident that even this speculum was insufficient in very difficult cases, and I therefore modified the instrument in such a manner as to increase the length of the handle, and altering the shape of the speculum itself in order the better to dilate and shorten the vagina.* Instead of the knee-elbow position, or the prone lateral position used by Sims, I employ the ordinary position for lithotomy, or rather an exaggerated lithotomy position which I call the "Steiss-Rückenlage," which permits of the most complete dilatation and shortening of the vagina, and is much more bearable to the patient than the other positions. Instead of the very broad (up to 2 cm.), flatly oblique paring of the vaginal mucous membrane, I employ a straighter excision of the edges (only 1-1½ cm. broad), which comprises not only the mucous membrane of the vagina, but even part of or the entire mucous

a longer duration of the operation, which increase in proportion to the difficulty of the case, may employ silver sutures.

* *Neugebauer* of Warschau, *Ulrich* of Vienna, and *Bozeman* of New York, have invented so-called self-retaining specula. The most useful of these is that of *Bozeman*. But I do not consider them of any great advantage. For they are not only superfluous, because the instruments may be held in proper position by a most inexperienced nurse, which can always be had, but they are often quite insufficient, because fistulæ of unusual location cannot be properly exposed to view. I have tried *Bozeman's* speculum on several occasions, but I have found that the fistula can be exposed much better by my own instrument, and that fistulæ somewhat out of reach cannot be operated by it at all.

membrane of the bladder. The adaptation of the edges is done by a single series of silk sutures, or in larger fistulæ by my double suture (Spannungs und Vereinigungs Näthe), which effect the closest union and relaxation of the fistulous edges. The sutures are made to pass according to circumstances, i. e., according to the size of the fistula, either near to or through the mucous membrane of the bladder, while the sutures for direct union always pass below this mucous membrane. (See my papers on this subject of 1854-68, and especially the more complete treatises of 1862 and 1868, which treat more in detail of the advantages of this method of paring and sewing. American surgeons always avoid the mucous membrane of the bladder, even in the operation of larger fistulæ.) Finally, I have so much simplified and improved the after-treatment, which is very tiresome for the physician and painful to the patient, that the convenience of both is considerably enhanced, and that those points of the usual method are done away with which retard the process of healing. I no longer keep a catheter in the bladder for the drainage of the urine and for avoiding the contractions of the bladder during its filling and evacuation, but I allow the patients to void the urine whenever they feel a desire to do so. Only in those exceptional cases where the patients cannot empty the bladder spontaneously, as happens occasionally during the first twenty-four hours after the operation, the urine is drawn by the catheter whenever the patient desires it, nor have the patients to submit to any other treatment. Evacuation of the bowels is not retarded artificially, patients are permitted to eat whatever they

like, and to assume any position in bed which they choose. In many instances I have even allowed them, when everything appeared to be favorable, to get up twenty-four hours after the operation and to take out-door exercise. This negative after-treatment, which was in opposition to that employed by surgeons of all countries, I had already recommended in 1860, and since that time mentioned in all my writings, and justified by observations which proved on one hand the innocuity of the urine and the movements of the bladder, during a normal filling up and evacuation of the bladder, and on the other hand the disadvantage of a catheter kept inside the vesical cavity, such as irritation, catarrh, spasms of the bladder, and its abnormal dilatation during accidental occlusion of the instrument.* Therefore, after the operation has been performed, nothing remains to be done in a large

* I can claim without hesitation the priority of the after-treatment which avoids the catheter. When I had announced it in 1860 as a thoroughly rational method, and in 1862 as the only rational one, it found a good deal of opposition, and surgeons only gradually begin to adopt it. But notwithstanding this I think it will be soon in general use, since not only myself but also other surgeons have obtained good results from it. In Germany the greater number of operators have adopted it. In England *Spencer Wells*, to whom I have sent my paper of 1862, has followed up this after-treatment and the use of silk sutures; in France, Dr. *Courty* has lately abandoned the catheter. Even in America, Dr. *Schuppert*, of New Orleans (see his paper on vesico-vaginal fistula, New Orleans, 1866), has published an observation which proves the inexpediency of the permanent sojourn of the catheter; he performed the operation on a patient who was obliged to leave her bed immediately afterwards in order to perform her domestic duties. The fistula was cured, but, strange to say, Dr. *Schuppert* rejects after all the after-treatment without the catheter kept in the bladder (which he ascribes erroneously to *Spencer Wells*), and considers the cure in this instance as an unheard-of happy accident which should not be relied upon.

majority of cases but to remove the sutures a few days later. This is done on the fourth day whenever the fistula can be reached with ease; in difficult cases from the sixth to the seventh day. Occasionally the sutures remained for a much longer time (several weeks), whenever (as it occurs) they were cut off immediately in front of the knot, and the sutures had become imbedded in the tissue. No more disadvantage has been observed from this accident than with silver sutures.

Since I have followed the principles named above, in the operation and after-treatment, the results of my operations for vesico-vaginal fistula have been so successful that they are probably not attained to such an extent by any other surgeon. They may be comprised in the following table:—

Old Method.

1. In Darmstadt, from 1853–1859 (see my paper of 1852, page 42):

Of 22 fistulæ in 22 patients, there were cured completely 14 fistulæ in 14 patients.

Five fistulæ in 5 patients closed up to small fistulous openings. Of these, one patient was afterward cured entirely by kolpoplexis; another has placed herself again under my care.

One patient with 1 fistula was discharged as incurable (is now again under my treatment).

Two patients with 2 fistulæ died.

Improved Method.

2. In Darmstadt, from 1859 till Easter, 1861 (see my paper of 1862, page 42):

Of 13 fistulæ in 13 patients, there were 12 fistulæ in 12 patients completely cured.

One fistula in one patient cured, with the exception of a very small fistula remaining.

3. In Rostock, from Easter, 1861, to Easter, 1866 (see my pamphlet "Contributions to Plastic Surgery." Prag, 1868, pages 141 and 142):

Of 53 fistulæ in 42 patients there were 49 fistulæ in 39 patients entirely cured.

Two fistulæ in 1 patient remained open.

Two patients died.

(Up to this time my results have been published.)

There are to be added:

4. In Rostock and Heidelberg, from Easter, 1866, till the fall, 1868:

Thirty fistulæ in 28 patients. Of these there were 28 fistulæ in 26 patients completely closed.

Two patients with 2 fistulæ died.

My total results are accordingly the following:*

Of 118 fistulæ occurring in 105 patients, there were 104 fistulæ in 92 patients cured completely (a later cure is counted in under the first category).

Five fistulæ in 5 patients almost entirely closed.

* Among each of the published series few cases remained under treatment which were only cured in later periods, and were described and counted among the results of the latter. I have at present under my treatment three patients, two of which belong to the first series, the complete cure of whom can only be attained by several operations performed at different times, on account of the large size of the fistula. In one of these I had performed kolpokleisis, in another one a pisio-elytrorrhaphia with an imperfect success; I believe that I can now close these fistulas by restitution of the vesico-vaginal septum.

Two patients with 3 fistulæ discharged as incurable.
Six patients died.

In comparing the results which were obtained before the year 1859, by the old imperfect method, with those obtained afterward by the improved methods, the facts speak very much in favor of the latter. While before 1859, of twenty-two fistulæ which occurred in twenty-two patients, only fourteen, equal to sixty-four per cent., were perfectly cured, while two patients, equal to nine per cent., died; after that year, of ninety-six fistulæ, which occurred in eighty-three patients, eighty-nine fistulæ, equal to ninety-two and two-thirds per cent (seventy-seven patients), were cured, and only four patients, equal to four and one-third per cent., died.

What an amount of certainty of success, however, is obtained by my simplified method you can perceive by referring to my writings of 1862 and 1868, which contained a detailed account of my operations; and further, by the data of my latest operations. During the six months of my stay in Heidelberg (from May to the end of October, 1868), we have operated in the clinic for fourteen fistulæ in fourteen patients; I operated on twelve, and each of my two assistants, Drs. *Heital* and *Hotz*, on one patient; three of the fistulæ were very small, they had remained after operations performed in Rostock; the other eleven were fresh cases; six of them had already been operated upon once, or oftener, by other surgeons. Several of the fistulæ were of considerable size, so that twelve sutures were necessary in five cases, and in one instance even fifteen sutures, to

close up the bladder; besides there existed several complications, so that three times the posterior lip had to be included in the suture; once a coexisting atresia of the urethra had to be bridged over and removed in another instance; kolpoplekisis was performed in two cases, and once a transplantation from the vulva had to be resorted to. But notwithstanding these unfavorable circumstances, all of the fourteen patients were cured after seventeen operations; eleven required only one operation, while three required two operations. The greater number of patients left their bed on the second or third day, and even took exercise in the open air;* only in a few of them slight fever followed, keeping them in bed for a longer while; none of the patients had *catarrh of the bladder*. The desire to pass water was at first more frequent, because the capacity was naturally diminished and only gradually increased. As a proof of the superiority of this method, it may be stated here that these successes were not only obtained by myself, but that the patients operated by my assistants were cured quite as promptly. Dr. *Heine* closed up a small fistula with four sutures. Dr. *Hotz* performed the operation of kolpoplekisis with thirteen sutures. The former healed up at once; the latter required a second

* I allowed my patients to walk about, because I consider this motion innocuous, and because I wanted to impress upon my pupils the inexpediency of the permanent use of the catheter and of absolute rest after the operation. As a rule, the patients are kept in bed, but they are allowed to change about in every position, and to sit up for the purpose of emptying the bladder; only when they feel perfectly well, and when they ask for the permission to get up, I no longer keep them in bed, after having seen so many successful results from this negative after-treatment.

operation for a small remaining fistula. Dr. *Heine* had performed the operation before this only once, without success, after an imperfect method. Dr. *Hotz* had never before operated for vesico-vaginal fistula.

After these results, dear sir, you will gain the conviction, that fine silk,* which has the preference over silver wire from its easier application, has no disadvantage whatever, compared to the latter, and that the catheter *en permanence* is a useless and even dangerous torture for the patient. You will therefore admit that the operation for vesico-vaginal fistula has attained a greater simplicity, perfection, and certainty of results in Germany than with any other nation.

Dr. *Schuppert*, of New Orleans (whose paper I obtained only after the publication of the first part of this article), has obliterated the vagina by *Vidal's* episio-elytrorrhaphia for an extensive defect of the bladder. The continence of urine was, however, only partially obtained. This single case of perfect occlusion does, however, not alter my opinion with regard to the disapproval of the episio-elytrorrhaphy in opposition to the operation of kolpokleisis. I consider myself so much more justified in this view, since for me a considerable size of the loss of substance constitutes hardly any more an indication for obliteration of the vagina.

* For the operation of vesico-vaginal fistula and other similar plastic operations, I make use of the so-called lebinese silk which I obtain of Mr. *Schliemann*, an instrument-maker of Hamburg. I use the finest number, which is thinner than the thinnest silver wire, as a double thread.

A MODIFICATION OF THE UTERINE ELEVATOR FOR THE
TREATMENT OF RETROVERSION AND RETROFLEXION.

BY E. NOEGGERATH, M.D., ETC.

OF all the dislocations which we are called upon to treat, none have tested the ingenuity of our branch of the profession more than retroversion and retroflexion. Although we admit that uncomplicated cases of forward displacement do occasionally give rise to suffering of the severest kind, we must, however, admit that the former are more generally productive of quite an extensive train of distressing symptoms. We can explain this fact, first, by the pressure exerted upon that portion of the peritonæum which constitutes Douglas's cul-de-sac. This is especially the case wherever retroflexion is accompanied by partial descent of the whole organ, and may be observed to such a degree that the fundus works its way through the upper part of the vagina into daylight. An instance of this necessarily fatal accident has been described by Professor Rokitsansky. A second course of symptoms owes its origin to the pressure of the fundus—especially in cases of retroversion—upon the numerous filaments belonging to the ganglionic nervous system, distributed along the anterior aspect of the spinal column. The frequent co-existence of spasm in the muscles of the anus and vagina, as well as the pain called coccyodynia, may be explained by this circumstance. A third source of suffering originates in the dislocation of the ovaries, accompanying very generally retroflexion. This dislocation is not only caused by the mere misplacement

of the womb, but partially by a relaxation and elongation of the ovarian ligaments. Disturbances in the physiological functions of many remote organs of the female system are the natural effect of ovarian irritation. Lastly, the circulation in the tissue of the uterus is altered in such a manner that it becomes softened—passive congestion—that menstruation is in most instances stimulated in the same manner as we see it from the presence of peri-uterine tumors. This increased flow is sometimes severe enough to produce an alarming menorrhagia. At other times menstruation is suppressed for many months, to reappear with all the signs of a miscarriage. If we add to this the presence of other symptoms, being the immediate effect of the bending of the organ upon itself, and observed in a more prominent degree in forward dislocations, such as dysmenorrhœa and sterility, I think we are justified in stating that retroversion and flexion do so much more interfere with the welfare of women than the displacements in the opposite direction, that physicians have been constantly exerting their ingenuity to cure this malposition of the uterus ever since the local treatment of diseases of the organs of generation began to be a section of the healing art.

As I intend in this short paper to treat only of one method of managing backward dislocations, I refrain from any further remarks touching the questions of etiology and pathology.

The first idea that suggested itself when the question of treatment began to be considered, was the attempt to place the uterus in an opposite direction from that

which it had assumed. Consequently, the followers of *Kiwich* and of *Simpson* made use of the uterine sound in all those cases where replacement by means of the finger, either introduced into the rectum or the vagina, appeared not to answer the purpose sufficiently; and there is not the least doubt that a number of cases have been cured permanently by these means. Even up to this day, replacement by the common uterine probe is the only method employed with a number here, as well as on the European continent. But it takes a great deal of time and patience to attain the desired result; and cases are recorded where the operation had to be repeated daily for more than a year before a complete success had been accomplished, while in a great many instances the uterus fell back to its former position immediately after the withdrawal of the instrument. The latter occurrence has probably been the rule since the use of the sound with a view of employing it as a means for the radical treatment of retroversion or flexion has been abandoned by the profession very generally.

The application of the sound, in the treatment of the dislocations in question, has two disadvantages: one consists in the danger of injuring the mucous membrane lining the cavity, while the other objection is based upon the fact that the replacement obtained in this manner is not sufficient for the purpose in view.

The first point has been thoroughly appreciated by *Dr. Sims*, but he has remedied it satisfactorily by the construction of his elevator. In the "Clinical Notes on Uterine Surgery," *Dr. Sims* remarks on page 263: "Now,

if we turn the handle of Simpson's sound on its own axis half a circle, the distal end will elevate the uterus from its abnormal position; but in doing this it will describe a semicircle of but little less than two inches and a half radius, sweeping the fundus round with the whole weight of the organ, supported principally on the very end of the instrument, which, in its gyration, changes its point of pressure from the posterior to the anterior face of the uterine cavity. To elevate the uterus still more, we push the handle back towards the perinæum, which thrusts the uterine end upwards. Is it to be wondered at, then, that we occasionally meet with patients who look upon the uterine sound with the most painful recollections?"

Dr. Sims, therefore, devised his uterine elevator, which is now so universally known that a description of the instrument seems unnecessary. I have been in the habit of using the same for the last five years, and I subscribe to every word its originator has written in its praise. Ever since I have employed it, I was so struck with its absolute innocuity and consequent superiority over the sound, that I have abandoned the former entirely. No matter how thoroughly you replace a womb, buried in the depth of the pelvis, you have a sensation of doing no harm whatever during the manipulations, the like of which is never experienced during the application of Simpson's instrument.

The elevator, however, has another advantage, not mentioned by its inventor,—it is the possibility of changing a retroflexion into anteversion to such a degree, that the os uteri becomes situated far above the fundus, a

position which can never be obtained by the use of the ordinary instrument with as much perfection. No matter how much you curve the stem of the probe between the knob and the handle, in order to overcome the obstacle presented by the anterior border of the perinæum, no matter how far you depress the perinæum, it is never possible to bring about such a complete change in the position of the organ involved as we are able to do with *Sims'* instrument. I experimented on one of the excellent papier-maché specimens, called "Bassin de Femme," of Dr. Auzoux, of Paris, and found that, in order to follow the dislocation attained by the elevator with the ordinary sound, the handle of the instrument touched a point corresponding to a line running through the lower half of the third sacral vertebra, and distant from the fourchette $5\frac{1}{2}$ inches, in a specimen where the entire surface of the os sacrum, up to the entrance of the vagina, measured only $8\frac{1}{4}$ inches. In the specimen alluded to, which represents a very good lateral section through all the organs contained within the female pelvis, the antero-posterior diameter measures just 4 inches. In executing the manœuvre usually employed for the replacement of a retroflected uterus, I find that I can carry the point of *Sims'* elevator just two inches farther forward than that of the sound, even if I push the handle of the latter far enough backwards to touch the os coccygis, and I had to depress the handle until I reached the third sacral vertebra before I could make the points of both instruments meet. Now, the several points involved in this question are so eminently phy-

sical and mechanical in character, that these demonstrations can be made to within very near reach of actual truthfulness on a dead specimen. The obstacle lies in the os coccygis and sacrum, which oppose a sufficient depression of the handle to make *Kiwisch's* sound act as thoroughly to replace a retroflected womb as it is done by *Sims'* instrument.

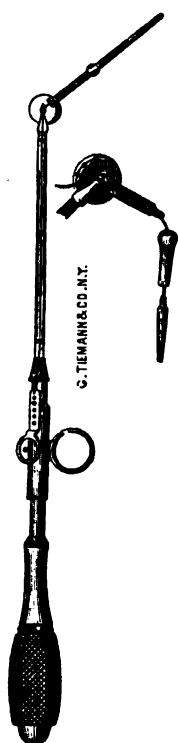
And, in fact, we find on employing the latter in the living to its fullest extent, that the os uteri looks, at the end of the manipulation, towards the promontory of the sacrum.

The great advantage of the elevator consists in the fact that the points of the uterine insertion of the ligaments are approached to their attachments in the pelvis to the utmost possible extent. They are thus permitted to contract by the simple law which governs all muscular structure, that contraction takes place in a ratio to the diminution of tension.

There is, however, a drawback in the application of the elevator, which makes itself manifest at the time when the apparatus is being removed from the uterine cavity. In attempting to accomplish this, the movable stem of the instrument, and with it the body of the uterus, is invariably carried backwards in a direct line with the shaft to very near the axis of the pelvis, from which position the fundus is very liable to resume its former position in the hollow of the sacrum.

In order to counteract this occurrence, I have devised, and Mr. Stotelmann has constructed for me a modification of the stem of *Sims'* elevator. The latter, instead of being built of one solid piece of metal, is

cut in three sections, and consists of a hollow tube. A strong piece of China silk is attached to its upper end and runs through the tube, leaving it at its lower end to run outside and along the shaft.



It terminates in a metallic ring, by which it can be attached to a projecting knob near the handle. The string thus straightened, brings the three sections of the intra-uterine part in close apposition, so that the stem moves forward and backward on the disk just as if it consisted of one single piece, carrying the uterus in any desired direction. After having accomplished the forward dislodgment to its utmost degree, the ring attached to the thread is unhooked, when the three sections of the stem become loosened and can be withdrawn piecemeal without affecting the position of the uterus in the least (see plate). The manner in which I proceed is the following: After the patient has been placed across

the bed on her back, I introduce the elevator in cases of retroversion, or I somewhat rectify beforehand the position of the uterus by the ordinary sound in cases of retroflexion of the second and third degree, and carry the uterus forward with complete anteversion. The patient is now requested to turn on her right side. I now detach the ring from the projecting knob, and pass my left forefinger into the

vagina, near the neck, to prevent it from being carried down with the instrument. I then move the instrument in such a manner as to disengage the lowermost third of the stem from the os by carrying the disk backwards and somewhat upwards in the direction of the axis of the now anteverted uterus. I now pull the ring attached to the instrument, by which the rod within the shaft disengages itself from the hole in the disk. Afterwards the instrument with the lower third is pulled out as far as the string permits it, and usually the upper two sections of the stem follow at a long distance from the lowermost. It occurs, however, that one or the other remains attached to the next part of the stem, usually the consequence of insufficient cleaning or rusting. If this should occur, the finger within the vagina can easily keep the upper one in its place until the lower one is withdrawn, the joints being marked by protruding edges.

I have better succeeded with this instrument than with any other to correct backward displacements, without any further apparatus to retain the uterus in its normal position. In some instances, where the ligaments were relaxed to a very high degree, I had to employ the constant current of a battery to insure a permanent cure.

The success obtained by such simple means has been encouraging enough to recommend the apparatus for further trial. I do not believe it to be the best instrument that could be made to answer the purpose, but I hope to have pointed out the way in which others should proceed to remedy this dislocation.

ON THE HEREDITARY CONVULSIONS OF INFANCY AND CHILDHOOD,

WITH A CONDENSED REPORT OF THIRTY-EIGHT CASES.

BY ROBERT P. HARRIS, M.D., Pa.

(Read before the Philadelphia Obstetrical Society.)

MY object in the presentation of this paper before the Society, is mainly for the purpose of placing upon record the medical history of a number of families, comprising two distinct lines of descent, and covering several generations, in which the predisposition to eclampsia, and in a few instances to epilepsy, was so decided that a very small proportion of the members escaped.

I use the term eclampsia as distinguished from epilepsy, not by the phenomena of the attack; for the former, when severe, exactly resembles the latter in this respect; but in regard to its disposition to recur less and less frequently, and eventually to cease altogether. Epilepsy in the adult is sometimes preceded by eclampsia in infancy, with an interval of some years between the two maladies. Both diseases are due to defective organization of the nervous system, and are intimately connected together in symptomatic character; yet there is a decided difference in the gravity of the two affections, not so much in the immediate as remote results. Eclampsia, it is true, is sometimes connected with imbecility to a greater or less degree, but this is an exception to the general rule, as the majority of eclamptic subjects show no deterioration of mind. Epilepsy in infancy, on the contrary, produces imbe-

cility in a large portion of cases, which, as they grow older, become worse and worse, until in some instances not a ray of mind is left. The convulsive seizures at the same time become more and more frequent instead of less, as in eclampsia, and, unlike those of the latter, can rarely be traced to an immediate exciting cause.

Even where eclampsia is undeniably hereditary, an attack rarely takes place which cannot be readily connected with some present exciting influence, such as the disturbance to the nervous system produced by dentition, febrile excitement, indigestible food in the alimentary canal, the exanthemata, etc. What distinguishes the hereditary from the non-hereditary disease is the directness of its descent from parent to child, the frequency of the attacks, and the trivial nature of the causes in a large proportion of cases.

I fully agree with Trousseau, that the hereditary transmission of various nervous affections may be direct and indirect, and that the hereditary predisposition of an epileptic may be traced to strange nervous phenomena entirely different from epilepsy itself. There is certainly an intimate connection between diseases of the nervous system in individuals and families. In one family under my care in which eclampsia is hereditary, there have also been cases of aphasia, apoplexy, mania, hysteria, and meningitis; in another, there were softening of the brain, epilepsy, imbecility, and congenital idiocy. Some were subject to convulsions in infancy, and others escaped. The subjects of hereditary convulsions are very frequently of highly excitable nervous temperaments, and in adult life, after

all traces of the eclamptic disposition have for a long time disappeared, are apt to present other forms of nervous disorder, either of a mild or grave character, such as chorea, hysteria, apoplexy, softening of the brain, etc.

The immediate exciting causes of convulsions in children, are dysentery and diarrhœa, scarlet fever, measles, whooping-cough, dentition, indigestion, eruptions generally, miasmatic fevers, injudicious bathing, late hours, too early instruction, and worms; the last of which, it is believed, but seldom induce an attack. The remote causes acting through the parents, are violence of temper, intemperance, early and late marriages, peculiar nervous temperaments, and hereditary transmission, generally direct, but in some cases indirect.

In my own experience, the majority of eclamptic subjects have been of excellent mental capacity, and were not injured intellectually by reason of their convulsive attacks. The small number in whom the mind became weakened were the subjects, with one exception, of very few attacks, and gave evidence of deficiency of mental vigor in early childhood. The physical health of eclamptics is necessarily in many instances during childhood below the average; but in youth and after maturity the majority are fully up to standard, and many become robust and vigorous.

It is not my purpose to enter into the nature and treatment of convulsive attacks, or the means of their prevention and cure, but simply to give a record of cases drawn up in such a form as to show the evidence of their hereditary origin and transmission. These have

existed to such a degree that it is impossible not to believe that eclampsia is, under peculiar circumstances not easily explainable, quite as decidedly hereditary in its character and influence as any of the transmissible diseases known to the profession; in fact, fully as much so as phthisis or cancer.

My first and most remarkable series belongs to a highly intellectual family, the medical history of which, with reference to nervous diseases, I have traced back through a period of 125 years, and to the childhood of the great-grand-parents of the present generation. These two ancestors were both remarkable for fine health, vigor of intellect, and longevity,—the great-grandfather reaching 81, and great-grandmother 93 years. There are no evidences to prove, or reasons to believe, that either had convulsions in childhood, or any disease of the nervous system in their lives. Both died from the effects of old age: he from gradual decay, and she from congestion of the lungs. There have been no cases of convulsions among the wife's relatives and their descendants, or among the descendants of *his* immediate relatives, except those in the direct line from himself. He married at 30, a lady of 23, so that both were of mature age. There was nothing in their habits, character, or health, to which any nervous hereditary disease could in reason be traced. In temperament, there was on his part an assignable cause: He was not only a man of highly irascible disposition, but excessively nervous, so much so that he could not bear the least noise or pain. The falling of a pair of tongs, stick of wood in the fire, or

even the upsetting of a cup of tea, would cause him to start from his seat and jump out upon the floor; and yet he was a brave man in battle, and not in the least degree, in the ordinary sense of the term, eccentric, but, on the contrary, one of natural manners and clear common sense.

From this union were born seven children, one of whom died in infancy, six reached maturity, and five lived from 68 to 83 years. Of these five, three inherited the nervous sensibility of the father, though not to the same extent—modified in a measure by much more equable tempers. One daughter became the subject of frequent fainting fits, and one son of eclampsia. This son was the fifth member of the family, and born 81 years ago. He passed the period of dentition in safety, but was afterwards, and until the age of twelve years, subject to convulsions from very slight causes. The attacks were usually traceable to indigestion, fever, or other immediate cause, and were twice produced by bathing his feet in hot water when he was apparently in excellent health. His last seizure, at the age of twelve, was from this cause, and on this wise: He was at the time on a visit to the State of New Jersey, and when Saturday night came, was directed by the lady of the house to bathe his feet in hot water for the purpose of ablution. Fearing the result, as upon a former occasion, he objected, urging that if he did so he would have a fit; but being over-persuaded, he yielded to the request, and, in consequence, frightened the lady by an attack of eclampsia. None of his sisters or their children

were subject to convulsions, but his descendants have inherited the disease to a marked degree.

In all other respects, the boy enjoyed good health. Though nervous, he was exceedingly amiable in temperament, and possessed an intellect of a very high order, with tastes so similar to those of his father that he devoted attention to the same class of studies, and ultimately became distinguished for the same order of acquirements; and years after the death of the former, was in several instances chosen to the same scientific positions once held by him. He grew up strong in frame, of medium height, and was free from disease of any material nature until the age of sixty-three, when he became affected with conscious aphasia during the delivery of a scientific lecture. Having always been exceedingly fluent, and having prepared his lecture with care, he became aware of the difficulty of expressing himself, and recognized his disease as belonging to the nervous system. He regarded his case in a very unfavorable light; and having a thorough knowledge of medicine, stated, on his return home, that his mind had begun to fail, and that he believed it to be the precursor of entire loss of intellect, and ultimate death from cerebral disease. In this opinion he proved to be correct, as he gradually lost his reasoning powers, and went on to complete dementia. During four and a half years he failed in mind and body, becoming pale, thin, feeble, and imbecile, and at last died of complete prostration, without apoplexy or epilepsy. It is remarkable in his case, that although for several months prior to his death he had not spoken

a word, or appeared to recognize any one, reason and memory for a moment returned, as the lamp of life flashed out. When the question was asked at his bedside if he was not dying, he took up the answer in these words: "Yes! I'm dying." Being then asked by his wife if he knew her, he said yes, calling her by name, and then expired.

Going back in the family history some years, we find the present subject of remark married at 29 to a lady of 22, belonging to a long-lived family, in which there was no predisposition to convulsions. From this union were born six children—two sons and four daughters—four of whom, viz., two sons and two daughters, became the subjects of eclampsia, which, as in the case of their father, did not attack them until after the period of dentition, and often arose from very slight causes.

1. The eldest son, now living at the age of 52, and in very good health, was the first of the children to inherit his father's disease—the first of the family, a daughter, having escaped, to become in after life the subject at one time of acute mania, and at another, after a long interval, of sudden and fatal apoplexy, at the early age of twenty-nine. The first of his attacks of convulsions made its appearance with the measles, after the termination of dentition. He had others subsequently at different periods, produced by fevers and indigestion, some of which were due to remittent fever, owing to the family at the time inhabiting a malarious district. His last convulsion was at 12, from an attack of meningitis, brought on

by bathing when over-heated. He was dangerously ill for some days, but recovered by the end of two weeks. The eclampsia in his case, as well as in those of his brother and sisters, lasted but a short time, the convulsive action never having exceeded ten minutes.

2. The second son had convulsions of a similar character, and from the same causes, with the exception of the cerebral affection. He ceased to be subject to the disease at an earlier period than the other three children, having his final attack when only five years old; but, notwithstanding this, as will be seen hereafter, he transmitted it to his children, without an exception, and in a very severe form.

3. The third daughter (the first, as stated above, and the second, having escaped) was of a nervous temperament, and very easily thrown into a convulsion by trivial causes. The most severe attack she ever had was produced by, and soon followed, the eating of a ripe plum, the skin of which she swallowed. She ceased to be eclamptic at the age of eight, having at that period a seizure, from the inception of an attack of scarlet fever. In after years she suffered from faintings and hysteria, but ultimately enjoyed excellent health.

4. The fourth daughter was similarly affected in childhood, and in most instances from indigestion. She was very strong and active, with a highly sanguine temperament, which still continues, and was not subject to any other nervous disorder except asthma, which she had occasionally in a dry, spasmodic form.

These four celamptic subjects resembled their father

in one point—that they all escaped until after dentition was accomplished. They varied in temperament, but, aside from their convulsive tendency, were quite as healthy in their childhood as the average of children, and reached maturity with well-developed frames and cultivated intellects. There was nothing in their temperament, physical condition, or mental organization, to lead one to suppose that all were destined to hand down to their children the disease inherited from their father. Like him, they all married at full maturity, the sons being 30 and 26, and the daughters 31 and 19½, the youngest of all being remarkably robust for her age.

A. The eldest son has had nine children, of whom seven are living, and of various ages between infancy and eighteen years. His wife is a healthy woman, and there is no reason for believing that either her mental or physical nature has had any independent influence in determining the character of nervous disease to which so many of their children have been subject.

1. Son. Born in 1848. Lived but five months, during which he had no convulsions. Died of ileus. This child may have been free from the inheritance or it may not; had it lived, the disease might have made its appearance during dentition, or at a later period, which was the case with other members of the same house.

2. Daughter. Born in 1850. Commenced teething at ten months, with fever and a convulsion, after which, whenever she had fever from any cause, and

her pulse arose as high as 140, she had an attack, which was usually soon followed by an abatement of the febrile excitement. She had her last convulsion in 1860, when ten years old, from indigestion, since which she has twice had fever and escaped, once being from measles, in 1866.

3. Son. Born in 1853. Dentition ushered in by a convulsion; commenced at ten months, as in the preceding instance, after which he was subject to the disease under the same circumstances. At the age of two years and four months he was taken with scarlatina maligna, commencing with several convulsions at short intervals, and indications of cerebral complication from the outset. The case soon terminated fatally.

4. Daughter. Born in 1856. This child proved to be entirely exempt from the inheritance. She had scarlatina simplex when a month old, and was subsequently affected with febrile attacks similar to those of the other children, but without any accompanying convulsion.

5. Son. Born in 1858. Commenced teething when only five months old, at which time he had his first convulsion. His attacks were subsequently quite frequent, although not of a severe type, and were accompanied by less heat of skin and a lower rate of pulse than in those of the eldest daughter. He had more convulsions in a given time than any of the children, when two years old having had five in six hours, and when eight years old seven in one day. Since this last age he has been exempt, having stood the trial last year of a pretty high fever on one occasion.

6. Son. Born in 1861. Never had a convulsion.

7. Daughter. Born in 1863. Had no attacks of eclampsia during the period of dentition. Had erysipelas at the age of three, and her first convulsion. She has had attacks upon several occasions since, and will probably be some time subject to them yet.

8. Son. Born in 1865. Passed through the period of dentition until two years old without a convulsion, and then had his first. He had several in the year 1867; one in August, 1868, brought on by eating a pear, and one this year, 1869.

9. Son. An infant, too young as yet to determine whether he is inclined to the disease or not.

Thus it will be seen that, of nine children, only two can be said to have been positively exempt, they having passed through a probation of eight and twelve years respectively.

B. The second son in the enumeration is now living, and in good health, but has a pulse of only 50 per minute. He married a lady of 23, belonging to a family free from convulsive attacks, but who, to an excitable nervous temperament, added the disadvantage of a feeble anæmic system, by which association the character of the inheritance from the father appears to have been very much aggravated. Not one of their four children escaped, and two died from the violence of the disease.

1. Daughter. Born in 1847. Had several violent convulsions during the period of dentition, one of which was right uni-lateral, and lasted, without intermission, five hours and a half. After the completion of

her dentition, she had a still more severe attack when two years and eight months old, which lasted from 6½ A.M. to 2 P.M., when she died. The cause of this seizure was not positively known, but was believed to have had its origin in enteric derangement.

2. Son. Born in 1851, and still living. Convulsions began with dentition, and were quite frequent during early childhood, from any indiscretion in eating, fevers, exanthemata, &c. The most severe of all his attacks was at 15 years of age, when he had two of great violence, one of which lasted about an hour, and presented all the characteristics of confirmed epilepsy, with frothing at the mouth, involuntary defecation, &c. They were induced by an attack of continued fever, with a very rapid pulse and high degree of nervous excitement. After the cessation of the convulsions, the disease presented the features of the early stage of typhoid fever, but gradually assumed a mild type, and left him well at the end of ten days. He is of small size, rather anæmic, of very good mental capacity, but of a decidedly nervous temperament. It is now three years since his last convulsion, which it is presumed will prove to be final, unless recurrent epilepsy should follow after an interval, as it sometimes does, where convulsions have been violent and epileptiform.

3. Daughter. Born in 1853; died in 1865. Of all the cases I have to record, this is the most remarkable as well as painful. At the age of only four months she had chicken-pox, and commenced to have frequent jerkings of the face, eyelids, and neck, in the form

commonly known as "inward fits." After these had lasted at intervals for about two weeks, they became more decidedly convulsive, and were repeated at intervals of six or seven minutes, night and day, for several days, at the rate of about 150 in twenty-four hours, until it was computed that she had in all about one thousand. She then had a period of comparative freedom, having only occasional convulsive seizures, until she was fifteen months old, when they became more frequent and constant; and finally so much so that not a night passed for years in which she did not have one or more attacks, except for a short period, whilst covered with an eruption of measles. In the first year of her infancy, appearances indicated that the child was possessed of good sense; but after her convulsions became more decided and frequent, symptoms of imbecility made their appearance, which grew and increased until she was totally demented, and her head became decidedly deficient in cerebral development. Her arms and legs presented an attenuated appearance, and she ultimately lost the power and will to use them in prehension and locomotion. By the time she was three years old I was satisfied that she was hopelessly incurable and idiotic, and gave as my opinion that she would, in all probability, ultimately die in a comatose state from congestion of the brain. The muscles of her arms and legs never became developed, but she had a good color, and was fat in body and face at the time of her death, at which period, being 13 years old, she presented the evidences of approaching puberty. She finally sank into a pro-

found coma, accompanied with short convulsions, and at last expired.

4. Daughter. Born when its mother was in delicate health from excessive vomiting during gestation. It was small and delicate, and became the subject of cholera infantum when ten months old, and had a convulsion just before death.

These four children very closely resembled the mother's family, in likeness and physical conformation, notwithstanding their having inherited from their father the tendency to convulsions. In the mother's family there was no such disease known.

C. The third of the series, and third sister of the father of the family just enumerated, married at 31 into a non-eclamptic family, and has had four children, all of whom are living in good health, and with active intelligent brains. Three of these have at various times been the subjects of eclampsia, and one has escaped, although not in other respects any more healthy or free from nervousness. In early life their mother was affected with fainting and hysteria, but for a number of years has enjoyed very good health. The children were treated with the greatest amount of care from their birth up, with a view to diminish as much as possible the frequency of convulsive attacks, by a properly regulated diet, and relief to the gums in dentition; and no doubt many a seizure was avoided by the watchfulness of their mother, and her prompt use of the lancet when their gums were inflamed and swollen.

1. The eldest son, aged 11; spare, but in excellent

health at present. Had his first convulsion at ten months old, from nibbling a piece of bread and swallowing some portions of the crust. He has had in his life eight or nine separate attacks, all with but one exception attributable to the effects of indigestion, the exception being produced by a fall on the abdomen. He never had more than one eclamptic seizure at each occasion, and in no case could they be traced to the effects of dentition. They were easily relieved by free purgation. His last attack came from eating grapes whilst away from home, when he was five years and four months old. He had scarlet fever last June, without any disturbance of his nervous system.

2. The second son has been entirely exempt, which is in his case quite as singular as that the other children should have been the contrary. He has had more sickness during the last two years than any of the four. He strongly resembles his father's family.

3. The third son, aged 8, is at present in excellent health. He has had frequent attacks of eclampsia, which commenced with his first teeth, and occurred at intervals during dentition. With the exception of one occasion, the convulsions came singly, which was when cutting his molar teeth, at which time he had four convulsions on the same day. Since the completion of dentition, his attacks have been more slight and at longer intervals. One of these periods was three years long, and ended last summer, when he had a slight convulsion at the commencement of an attack of dysentery. He has since this had chicken-

pox without eclampsia, but had a slight convulsion this spring, brought on by indigestion.

4. Daughter, aged $5\frac{1}{2}$; fat and healthy, with a remarkable degree of intelligence for her years. Had more severe and numerous attacks than her brothers, owing to the fact that in early infancy her digestive organs were very easily deranged. She commenced during dentition, and instead of having, as they did, single convulsions, usually had at least three in twenty-four hours before final relief was obtained. She had one in December, 1866, July, 1867, November, 1867, and January, 1869. She also had the chicken-pox last fall; but as it was very mild, and without fever, it was not accompanied with eclampsia.

D. The fourth daughter of the series, and sister to the mother of the last enumerated family, has had four children also, two of whom died in infancy, and two are living. She is a woman of full habit and sanguine temperament, and has not had any disease of the nervous system since she was twelve years old, except asthma, which she has had occasionally, as before mentioned, in the dry, spasmodic form. Her husband is quite robust and healthy, as were also his parents.

1. Daughter. Born in 1848; died when three months old, of acute hydrocephalus, after eleven days sickness, and without any convulsions.

2. Daughter. Born in 1849; died when three years and four months old, of scarlet fever. She was also free from eclampsia.

3. Son, now living, aged 18, and in good health,

although rather small for his age. In early childhood he had several marks of scrofula, among which were chronic otorrhœa, with post-aural abscess, caries of mastoid process and cells; but for some years he has been free from any manifestation of the diathesis. He has had altogether four eclamptic attacks, viz.: At four years and two months, from gastric fever; six years and five months, from scarlet fever; eleven years and two months, from measles; and eleven years and five months, from remittent fever. He had no convulsions during the cutting of his teeth, or from the disease of his ear, and had had an attack of measles prior to the one mentioned above, but with no eclampsia. He is now a college student of good mental capacity. In likeness he resembles his father's family.

4. Female, aged three years and three months; a bright, rosy girl, in fine health, and of precocious intellect. Has had one convulsion only, produced by dentition. She had diarrhœa, and was quite sick during last summer, but escaped a repetition of eclampsia. The tendency to the affection appears to be quite slight in her case as yet; it may, however, become more developed as she grows older. She bears a strong resemblance to her mother.

I have thus given the medical history of four generations in direct descent, in so far as diseases of the nervous system are concerned, and claim to have proved the transmissibility of infantile convulsions, and the intimate relationship between eclampsia and epilepsy in the inheritance. Why it should descend in so remarkable a manner in some families, and

scarcely, if at all, in others, is beyond our comprehension, as it appears to pay little regard to inter-marriage of opposite temperaments, the nervous conformation of the children, or their resemblance to one or other parent. That eclampsia is not ordinarily hereditary is very evident from the experience of the profession generally, as it is well known to occur for the most part in isolated cases. But that the record I have given is not unique, may also be established by a reference to other cases in my own practice.

For twenty years past, it has time and again been my painful duty to watch by the bedside of case after case of eclamptic and epileptic convulsions affecting the children of another family connection, in a form much more severe, and producing a far greater average of mental deterioration. This record is taken from an entirely different sphere in life, as all the male heads of the families for three generations have been American mechanics, and nearly all of them carpenters. I have had quite as good opportunities for watching the cases as in those of the other genealogy, but still cannot, in many points, obtain as accurate a record, which is mainly due to the difference of education. In this family I have had grandfather, grandmother, children, and grandchildren under my care at different times. The grandfather was a healthy man until advanced in years, when he gradually lost his mind, and finally died of apoplexy at 75. His widow is still living, aged 63, and in good health.

I have no means of ascertaining whether he ever had convulsions in childhood or not. He was under the

impression that he had not, but was not able to prove this opinion. There were no cases on his wife's side. Neither were at all nervous in temperament, although several of their children are quite so.

They had eight children, all of whom lived to get married, and still live, except one.

E. *John*, the eldest of the family, never had convulsions. He has had eleven children, only one of whom ever had a fit.

F. *Mrs. M.* likewise escaped, and there have been no cases in her husband's family. But notwithstanding this, four out of five of her children have had either eclampsia of a severe type, or epilepsy. She is a strong, hale woman, of remarkably good sense, the most so of any of her family.

1. Son, aged twenty-five, spare, narrow-chested, and of rather feeble intellect. Before he was six years old he had three convulsive attacks, at long intervals, of several hours each, the longest of which was at five years of age, and lasted seven and a half hours, leaving him with right hemiplegia, from which he recovered in about a month. From five until fifteen he was free from any attack, but was pale, thin, delicate, and at one time (when eight) had purpura hemorrhagica. At fifteen he had remittent fever and his fourth convulsion. At twenty-three, being a house painter, he suffered violently with colica pictonum, which brought on three convulsions averaging fifteen or twenty minutes each. Since his recovery he has changed his business, has improved in health and not had any attack.

2. Daughter. Had one convulsion when nearly two

years old, produced by dentition, which lasted eleven hours. She became afterwards strong and healthy. At eight, she was attacked with dysentery, when she had another, but not so severe, after which she lived three days and died of the disease of the bowels. I was not in this city at the time.

3. Daughter. Had a convulsion when one year and five days old (in 1848), lasting eleven hours and ending fatally. The attack came from her teeth. I saw her only two hours before death.

4. Daughter, now eighteen years old and in good physical condition, so far as strength and flesh are concerned, but with a mind somewhat impaired by epilepsy, which she has had fourteen years, and latterly in a very peculiar form, generally only affecting the parts supplied by the pneumogastric nerve. She had no convulsion until four years old, when she had intermittent fever, and a fit during the cold stage. Since that time she has had three true epileptic attacks of the common type, and a number of others of the peculiar form mentioned, of which I have met several cases within a week past. The attack comes on with a feeling of fright; followed successively by a choking sensation; desire to vomit, without accomplishing the act; difficulty of breathing; violent palpitation of the heart; loss of consciousness; and finally ending in sleep. Occasionally there is a regular convulsion, but not generally. I have met with the same type recently in four persons, one male and three females, from ten years old to forty. Three of them thought they had disease of the heart, and were not aware that they had ever had a convul-

sion. Bromide of potassium has answered in all the cases. In one case, if twenty grains are taken when the feeling of fright comes on, it very materially checks the dyspnœa and cardiac spasm.

5. Daughter, fifteen years old, spare, but in good health. Has never had a convulsion.

G. *Mrs. U*—, now dead. Had eclampsia on several occasions in infancy. Married a strong, healthy man. Gave birth to four children, of whom two were still-born; one premature; and one at maturity, who now lives at the age of twenty-two. *Mrs. U*. died at twenty-seven, of diseased liver and dropsy. Her daughter has had but one convulsive attack, which ushered in the scarlet fever when she was two years old. She now enjoys good health.

H. *Mrs. B*— is reported to have had no eclampsia in childhood. She is a woman of florid complexion and full habit, like her sisters and mother. Of her six children, two died in early infancy, one of asthma, a few hours after birth, and the other of morbus cœruleus.

3. Girl, now living and married, aged 24 years, and in excellent health. She never had a convulsion, *but one of her two children has had.*

4. Boy. Died in convulsions, brought on by hooping-cough, when only two weeks old.

5. Boy. Died of scarlet fever when seven years old. Had had repeated attacks of convulsions during teething, but no attack from the scarlet fever.

6. Girl. Died of the same disease when 2½ years old. Was also subject to eclampsia, but had no fit with the scarlet fever.

I. *Mrs. R*— also had convulsions repeatedly in childhood, the last when six years old, from hooping-cough. She married a very healthy man, and has had three sons, who are all living, two of whom have had eclampsia. She is in good health, but has partial amaurosis of several years' standing.

1. A—, now 22 years old, married, and the father of one child, an infant. He has always been of a very nervous temperament, but has good health and average intelligence. In infancy and childhood he had repeated attacks of convulsions, but never severe.

2. G—, 20 years old, athletic, and of good nerve. Had fever and diarrhoea with almost every tooth that he cut, which were remedied on each occasion by a timely resort to the gum-lancet. He never had a convulsion.

3. J—, 18 years old; healthy, and well developed in body, but decidedly deficient in intellectual capacity—in fact an idiot, having no memory of any measurable value. He was subject to convulsions, but has not had an attack since early childhood, although affected with pneumonia at ten.

J. *Mrs. S*—. Never had convulsions; has no children.

George. Also exempt. Has three children, one of whom, now six years old, has been subject to eclampsia.

K. *Thomas*. Thirty-two years old, and of full habit, has had slight cardiac disease for twenty years. Was subject to convulsions frequently, until six years old, brought on by cutting teeth and indigestion. *He has*

four children, from two to eight years old, all of whom have been affected with eclampsia.

With these two family groups I close the record, having, as it appears to me, given good grounds for the opinion advanced, as to the marked hereditary character of infantile convulsions, under peculiar unexplainable circumstances. The record covers 38 cases, 37 of which occur in 13 families, in which, collectively, there were 55 children who lived long enough after birth to prove their liability or exemption. Of these 37, 27 still live; and of those that died, only five fell victims to convulsions. Of the 14 survivors subject to convulsions in the first group, not one appears to have suffered in the least from mental deterioration. The same cannot be said of the second group, which, in 13 subjects, has one idiot and two weak-minded. There have been but two cases of recurrent and confirmed epilepsy in the 37, one of whom died comatose at 13, and the other lives, aged 18, and, as I have mentioned, still subject to it. Of the present rising generation there are 31 members, only one of whom has as yet been married; twenty of the thirty-one have had convulsions. It will be interesting to note the effect of the inheritance upon their children, and to mark the difference between those of the eclamptics and exempts.

Of the 59 children, four died too early to determine whether they were liable to convulsions or not; so that the 37 cases occurred in 55 children. In the first series, 14 out of the 18 are living; in the second series, 13 out of 19.

SUMMARY.

Families in which eclampsia is hereditary.	Number of children born in each.	Number of members now living.	Number of subjects of infantile convulsions.	Deaths.	Causes of death.	Ages.
Father's family	6	4	4	2	Apoplexy; phthisis . . .	29; 21.
1st son's	9	7	5	2	Ileus; scarlet fever . . .	5 mos.; 2 yrs. & 4 mos.
2d son's	4	1	4	3	Eclampsia; epilepsy . . .	2 yrs. and 8 mos.
					Cholera infantum	18 years.
						10 months.
3d daughter's . .	4	4	3	0		
4th daughter's .	4	2	2	2	Acute hydrocephalus . . .	3 months.
2D SERIES.					Scarlet fever	8 yrs. and 4 mos.
Father's	8	7	3	1	Dropsy	27 years.
1st daughter's .	5	3	4	2	Eclampsia; dysentery . .	1 year; 8 years.
2d do	1	1	1	0		
3d do	6	1	3	5	Congenital asthenia . . }	Soon after birth.
					Morbus coeruleus . . . }	
					Whooping-cough and eclampsia	2 weeks.
					Scarlet fever; two cases	7 years; 2½ yrs.
4th do	3	3	2	0		
2d son's	3	3	1	0		
3d son's	4	4	4	0		
1st g. daughter's	2	2	1	0		
18 families.	59	42	37	17	Died in convulsions, 5.	Under 1 year, 6.

CONCEALED ACCIDENTAL HEMORRHAGE OF THE GRAVID UTERUS.

BY WILLIAM GOODELL, M.D.,
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(Read before the Philadelphia Obstetrical Society, March 4, 1899.)

APOPLEXIES of the placenta, "whether or not accompanied by external bleeding," have long ago been pointed out, by so eminent a pathologist as Rokitsansky, as one

of the most frequent causes of abortion. (Path. Anat. Sydenh. Trans., vol. 2, p. 347.) But the concealed form of this effusion has been so rarely met with, or perhaps has been so rarely recognized, that the majority of obstetrical authors either deny its existence, or else describe the symptoms from hearsay. A few write from personal observation; and these unite with one consent in stating how obscure are the signs; how embarrassing the diagnosis; how fatal the prognosis.

Early in this century the melancholy death of the Princess Charlotte gave a great impulse to the study of internal uterine hemorrhages. In 1818 the French Academy of Medicine offered a prize for the best essay upon this subject. Among several competitors A. C. Baudelocque was "crowned;" M. Bonnieu received a gold medal, whilst the silver medal of emulation honored the "Mémoire" of Madame Boivin. This circumstance shows the infrequency of concealed accidental hemorrhage, for in her essay Madame Boivin denies the possibility of this complication; and in this opinion she is upheld by Madame Lachapelle, ladies who could unitedly lay claim to the vast experience of over forty-two thousand labors. Not only does the former cast doubts upon the accuracy of such observers as Baudelocque, Levret, and Chevalier, since they "did not measure," but "simply estimated" the amount of the hemorrhage; and because other internal organs beside the uterus were not examined; but she boldly asserts, "I cannot believe that the uterus, filled with the product of conception, can, at any stage of gestation, admit so considerable a volume of blood, unless it has been

recently emptied, nor can the quantity be sufficient to occasion the death of the woman."* Again, she lays down the following false propositions and italicizes the first: "That internal hemorrhage in pregnancy, *by over-distending this organ, is a sure means of determining its contractions*; that the disease itself becomes its own remedy; that the internal uterine loss, instead of being more dangerous, is less so than an external one, the case being that of pregnancy; that, were it otherwise, the tampon should be banished from the therapeutics of uterine hemorrhage."†

Even Velpeau, a still more modern authority, after quoting the names of "Mauriceau, De la Motte, Levret, Baudelocque, and Merriman," as observers of internal flooding, expresses his scepticism in the following language: "How, indeed, can we conceive that the blood, which escapes from the uterine vessels in somewhat considerable quantities, is capable of dilating beyond measure, and almost instantaneously, the cavity of the womb, instead of running between the gestative organ and its contents, so as to escape outwards, or of rupturing the membranes, and becoming effused within their cavity? How can we admit that the adherences of the placenta, which are habitually so weak, could resist the effort of the blood, tending to form a new cavity for its own reception, more powerfully than the uterus, which yields with so much difficulty?"‡

Again, out of 22,498 labors occurring in Guy's Hospi-

* "Mémoire sur Les Hemorrhagies Internes de L'Uterus." V. Boivin, p. 92.

† Ibid. p. 96.

‡ Meigs' Velpeau, p. 371.

pital only three cases of this kind of hemorrhage were observed; and not one in 156,100 deliveries at the Dublin Lying-in Hospital, although Dr. Hardy, one of its Masters, met with a case in private practice.* Prof. Meigs, in a busy practice of many years, "never met with a sample of this kind of bleeding." ("Treatise on Obstetrics," p. 441.) The following quotation from Prof. Hodge is not the language of an eye-witness: "That such accidents may occasionally ensue, there can be little doubt, although, *à priori*, it would seem to be very improbable, as the uterus is a *plenum*." ("System of Obstetrics," p. 473.) Prof. Bedford is "much disposed to refer some of those cases of sudden, supposed inexplicable dissolution, which occasionally occur in the latter part of pregnancy, to this peculiar but happily not common form of hemorrhage." ("Principles and Practice of Obstetrics," p. 483.) But he does not substantiate this opinion by a single example, and gives no symptoms, other than the rational signs of hemorrhage from any internal organ. Neither Blundell nor Churchill appears to have had a clinical knowledge of this form of hemorrhage; the latter being indebted to Dr. Burns, who himself never saw a case, for its pathology and diagnosis. ("System of Midwifery," p. 421.) M. Cazeaux, usually so rich in examples from his own experience, gives not even a foot-note to illustrate this complication of labor, but quotes the observation of others; indeed, no original observer could make the statement that "the hemorrhage can always be recog-

* Brit. Record of Obstet. Med., April, 1848.

nized whenever it is abundant enough to endanger the mother." ("Practical Midwifery," p. 694.) Smellie, Pasta, and W. Tyler Smith are silent about this form of hemorrhage; John Ramsbotham, Denman, Jacquemier, and Murphy allude to it as historians, not as eye-witnesses; whilst very few authors of our standard works on midwifery can say with F. Ramsbotham, "it has occurred to me to meet with a few cases of this kind of concealed hemorrhage." ("System of Obstetrics," p. 392.) In 1851 Dr. Tanner met with one example, and speaks of but "ten published instances of concealed hemorrhage with which I am acquainted." ("Signs and Diseases of Pregnancy," Am. Ed., p 459.) Nine years later, by careful research, and by the note-books of medical friends, J. Braxton Hicks was able to add but thirteen more to the list. (London Obstetrical Society's Transactions, 1860, vol. ii. p. 53.)

The feeblest ray of light is welcome, when shed upon obscure diseases; and especially upon one which, although so fatal to the pregnant woman, is denied by some high medical authorities, barely recognized by others, and clinically described by but a few. When good ships founder upon some sunken reef, whose bearings are vaguely given in Admiralty charts, that master best serves the cause of humanity who records his own disaster, and plots down the course which led to it. For a like reason, I shall give the details of a fatal case of concealed accidental hemorrhage which came under my own observation, even at the risk of exposing my own errors. To this I shall add abstracts from one hundred and five examples of this rare complication, in

which I have endeavored to omit nothing of importance, and to adopt the very language of the observers.

CASE L.—Catharine M——, æt. 30, a pale-looking Irishwoman, eight years married, was admitted into the Preston Retreat, September 4th, 1866. Has had four labors at term, each requiring the forceps, and progressively increasing in difficulty, although the infants were born alive. Her last labor was the most severe, notwithstanding the child weighed much less than the others.

For six days she cheerfully performed light work, making no complaints to me, but, after her death, I learned that on the day previous to her admission she had fallen down a flight of stairs, and had since spoken of “a pain in her liver,” which prevented her from sleeping on her right side. At 1 A.M., the 10th instant, she was aroused by a spasm of pain, and soon after presented the following symptoms: Countenance pale and anxious; eyes hollow; pulse frequent and thready; extremities cold; frequent retchings, purgings, and eructations annoyed her; whilst a constant agonizing pain in the right hypochondrium, increasing at irregular intervals like cramps, caused her to utter loud outcries. The cervix uteri was conical; the os dry and impervious; every symptom of labor absent. The index-finger easily reached the promontory of the sacrum, showing a narrow conjugate diameter; the abdomen was distended and tympanitic; the uterus normal in form. She attributed her sufferings to a colic produced by a supper of cucumbers, and as they were vomited up undigested I adopted the same opinion. Anodynes

were given, heat applied to the feet, and sinapisms to the abdomen. Reaction soon set in; severe pain ceased, and she quietly dozed until 6 A.M., when she suddenly became very restless and screamed with the agony. The same train of symptoms was repeated; retching, collapse, etc., and I began to mistrust the accuracy of my diagnosis; so, after giving her ether, a more thorough examination was made.

There were no appreciable labor pains; no sensible intermittent condensation and relaxation of the uterine fibres; no dilatation of the os uteri. The uterine walls were tense and unyielding, as if under the action of one continuous labor pain. The placental murmur was just perceptible, but all the foetal sounds were absent. I now began to suspect the existence of a concealed hemorrhage, and, sending for assistance, plied anodynes, stimulants, heat, and ether enough to lull the pain.

At 10 A.M. a small gush of sanguinolent serum took place, followed by a constant dribbling of the same fluid. This I took to be the waters, but, upon examination, found the membranes tense and entire, and the os now dilated to the size of a silver quarter, but with an extremely sharp and rigid edge, in which condition it remained for many hours. This discharge gave great relief; she rallied, lay quietly, and eagerly took some nourishment. In this improved state she continued until 5 o'clock P.M., when, during my momentary absence, insisting upon rising to empty her bowels, the membranes burst, and she began to flood. At this moment Dr. A. H. Smith opportunely arrived. The prostration now ensuing was so complete that the os immediately

relaxed, whilst the uterine and abdominal walls became so flaccid that the outlines of the child's body and extremities could be traced by the eye; in fact, the position of the head was thus determined, for the fontanelles were beyond a discriminating reach. Dr. Smith applied the forceps, but no traction on his or my part could make the head engage. During these efforts the flooding persisted, whilst the struggles and shrieks of the poor creature were so distressing that ether was resorted to. The head was therefore opened, and even then with difficulty delivered, whilst the shoulders demanded the use of the blunt hook. A fearful gush of grumous blood followed the delivery; and the detached placenta, together with a basin full of old clots, was immediately removed. The uterus, in spite of ice, friction, and galvanism remained as limp as a wet rag; indeed, so extremely flaccid, that while the hand was within the uterine cavity to stimulate contraction, the form of the fingers, and the intervals between them, could be seen through the abdominal walls. No further hemorrhage, however, took place, as the woman was completely drained, and she quietly died at 7½ o'clock P.M., about twenty minutes after delivery, and eighteen hours after the first attack. The placenta was large, flattened, and, upon its uterine surface, studded with clots which dipped down into its substance. The child lacked a month of full term, was thoroughly blanched, and weighed, without the brain, seven pounds and two ounces.

Autopsy: The posterior tips of the pubic bones at the symphysis were prolonged into two processes, form-

ing a re-entrant angle; whilst the promontory of the sacrum was sharp and projecting, narrowing the conjugate diameter to barely three and a half inches. An inch below the symphysis, on the right descending pubic ramus, a sharp exostosis jutted out; whilst another occupied a point on the ileo-pectineal line, near the right sacro-iliac junction; both still further diminishing the capacity of the pelvis. To add to these complications, the pubic rami formed a Saracenic, in lieu of the normal Roman arch. The uterus was healthy, but blanched and flaccid; the placental disk situated on its right postero-lateral surface, which accounted for the absence of any lateral bulging of the uterus as one of the symptoms. At points corresponding to the promontory and to the exostoses, several ecchymosed grooves were ploughed out, on the internal surface of the womb, by the pressure of the child's head. Upon the anterior peritoneal surface of the womb was found a fissure, about an inch and a half in length, so neatly divided as if cut with a knife; but no blood had collected in the abdomen.

CASE II.—Eighth month of first pregnancy. After going out to tea was seized with vomiting, which ruptured the membranes; was restless and had slight pain in the back. Uterus high up and hard to reach. No labor pains for several hours; no external hemorrhage. Anodynes given for supposed colic. Hard black mass of coagula followed delivery. Mother recovered; child dead and exsanguinous.—GEORGE KING; *Provincial Med. & Surg. Jour.*, March, 1852.

CASE III.—Æt. 40; six and a half month of seventh

pregnancy. After house-cleaning attacked by repeated vomitings, paleness, and faintness. Meteorism and distressing distention of abdomen, visible to bystanders, with a bursting feeling. Uterus distended as if at term, and bulging on right side; absence of foetal and placental sounds; cervix undeveloped, and no signs of labor for twenty-four hours, when a small amount of blood appeared. Carminatives given for supposed colic; after the hemorrhage, opiates, stimulants, and ice externally. Membranes punctured after the pains had become vigorous, and the os dilated. More than two quarts of clots followed delivery; placenta two-thirds detached. Mother recovered; child dead.—THOMAS F. COOK; *New York Med. Times*, 1854, p. 394.

CASE IV.—During normal labor patient became sick at stomach, restless, and exclaimed she was dying. Labor immediately ceased, but soon recommenced vigorously, rupturing the membranes. Liq. amnii colorless. No hemorrhage before delivery, but several large clots after. Mother recovered; child (?)—*Ibid.*

CASE V.—Æt. 45; ninth month of thirteenth pregnancy; roused out of sleep by a severe pain, got up and fainted away. Eight hours after sent for a midwife, who found the os dilated, presentation natural and pains very trifling. Got weaker every moment; dyspnoea and indistinct articulation; no external hemorrhage. After two hours more, died undelivered.

Autopsy: Membranes entire; os dilated; the child's head in the brim. Placenta detached; uterus very large, filling the whole abdominal cavity, and distended

by clotted and liquid blood.—WM. THOMPSON; *Medical Gazette*, 1844, vol. 2, p. 289.

CASE VI.—Æt. 28; seventh month of first pregnancy; suddenly seized with severe pain in abdomen, followed by syncope, vomiting, tympanitis; thready pulse; cold and clammy skin. Os rigid and undilated. Treated by external and internal stimulants for supposed colic, and died undelivered, thirty-three hours after first attack, without any signs of labor.

Autopsy: Placenta partially detached; membranes entire; behind them three quarts of blood, none appearing externally.—J. BURKE; *Nelson's Lancet*, vol. 9, p. 125.

CASE VII.—During normal labor some external hemorrhage took place, and the pains ceased; immediately the patient began to distend in a manner visible to the midwife and bystanders. She was now free from all pain, wished to sleep, and died undelivered before the arrival of a physician.

Autopsy "verified suspicions of internal hemorrhage."—WM. P. DEWEES; *Deweese's Midwifery*, p. 252.

CASE VIII.—Seventh month of gestation; after a long walk, attacked by dull pain in fundus uteri, like those preceding the catamenia; repeated syncope; pallor and alteration of countenance; sanguinolent serosity, membranes being entire and tense; rapid augmentation of uterus to the size of one containing twins at term; no labor-pains until os dilated, when they became weak and expulsive. After forced dilatation of the os, the membranes were punctured and the forceps applied, delivery being followed by a hatful of clots. Mother and child both died.

Remarks.—J. L. Baudelocque argues from this case that an internal hemorrhage which augments the volume of the uterus must provoke contraction, and therefore induce labor.—J. L. BAUDELLOCQUE; *Hémorrhagies Internes, par A. C. Baudelocque*, p. 99.

CASE IX.—In the third month of gestation, after lifting a weight, seized by atrocious pains in the belly, which visibly increased in size. She was pulseless, colorless, cold as marble, and had dyspnœa; no external hemorrhage; no sign of labor. A vein was opened, but not a drop of blood flowed, and she soon after died. Immediately the Cæsarean section was made to save the child, under the impression of advanced pregnancy, from the size of the womb; but only a three months' foetus was found imbedded in one vast clot.—M. CHEVALIER; *Ibid.*, p. 96, from *Journ. de Médecine, Chirurg. et Pharm.*, vol. 21, p. 363.

CASE X.—Æt. 47; multipara; sixth month of gestation; attacked by colic and pains in the loins, followed by syncope, thready pulse and cold skin. The midwife in attendance, finding no indications of labor or of hemorrhage, did not puncture the membranes. She died undelivered, five hours after first attack.

Autopsy: The placenta was found centrally detached by a blood-clot, weighing seventeen ounces.—M. PLAINCHANT; *Am. Jour. Med. Science*, vol. 15. p. 279, from *Jour. de Méd. et Chirurg.*

CASE XI.—Æt. 30; at term of sixth pregnancy. Taken at 7 A.M. with labor pains, which soon ceased; at noon, after a repast, they recommenced; the membranes soon burst, and the head engaged. The pains

now ceased, and the woman grew very restless and weak, fainted repeatedly, vomited up her food, and died undelivered at 11 P.M., without any external hemorrhage.

Autopsy: The child's head found tightly wedged into the pelvis; the placenta one-third detached, and the uterus distended by an enormous quantity of blood.—M. BALME; *Journ. Générale*, tome 2, p. 17.

CASE XII.—During normal labor the uterus increased in size during the interval of each pain, especially in the epigastrium, where it was hard, tense, and very painful. No external hemorrhage; labor pains regular; delivery aided by the forceps and followed by a great gush of fluid and clotted blood. Mother recovered; child dead; it weighed fifteen livres, and had several turns of the cord around its neck. The cord was found torn across, and Levret deemed this the source of the hemorrhage.—M. LEVRET; *Hémorrhagies Internes*, par Madame Boivin, p. 116.

CASE XIII.—Ninth month of fourth pregnancy. After great excitement had tingling pains in back; great sinking; vomiting; yawning; and fainted away three times. Os capable of admitting the finger; presentation natural; no external hemorrhage; no signs of labor for some hours, when trifling pains occurred. Ergot given with no effect, but the os slowly dilated, and the membranes were punctured as soon as they protruded. Strong expulsive pains now began, followed in two hours by delivery of a dead child and a large clot. There was a rent in placenta at the root of the umbilical cord, and a thick coagulum on its maternal sur-

face. Mother recovered.—GEO. KING; *Braith. Retrospect*, Part xxvii., p. 185, from *Association Med. Jour.* January, 1853. •

CASE XIV.—Multipara. All her children but one had perished during labor, in consequence of ante- or post-partum hemorrhage, and that child was saved by early puncture of the membranes by her physician. In her last and fatal labor a midwife attended her, who stated the labor was natural, excepting a great feeling of faintness.

Autopsy: Child's head firmly wedged in pelvis, preventing any escape of blood; six pounds of coagula found at the fundus uteri, and the placenta much detached.—WM. E. CROWFOOT; *Ibid.*

CASE XV.—At term of tenth pregnancy, suddenly seized by alarming collapse, extreme prostration, and trifling oozing of blood. Ergot given without any effect. Stimulants then resorted to, which brought on reaction, labor pains, and delivery. Mother recovered; child (?)—J. M. WINN; *Lond. Lancet*, 1853, p. 382.

CASE XVI.—Ninth month of eleventh pregnancy; aroused from sleep by great pain; had the usual constitutional symptoms of a most alarming character; great distress from distention; an accessory uterine tumor of undue elasticity; os moderately well dilated; membranes distended; a trifling external hemorrhage, and no labor pains. The membranes were punctured, and version resorted to as soon as the nature of the accident was recognized. Liq. amnii very bloody, although no rent could be found in the placenta or membranes; placenta sacculated and one-third infiltrated with clots. Mother recovered; child died.—J. T. INGELBY; *Ibid.*, Jan. 11, 1840, p. 553.

CASE XVII.—Ninth month; labor *supposed* to have commenced on the previous evening; pains excessively feeble; collapse great; uterine tumor strikingly conical. Membranes were punctured, but patient died undelivered shortly afterwards, in convulsions, without any external hemorrhage.

Autopsy: Circumference of placenta inordinately large; the edge still adherent and confining one hundred and twenty-one ounces of blood.—*Ibid.*

CASE XVIII.—A young woman at the fourth month of gestation, in perfect health, ran up-stairs to make her bed; she returned quickly; complained that she felt very ill; sat down in a chair, and soon after died in a state of syncope.

Autopsy: Internal organs all healthy; a blood clot, four ounces in weight, was found between the chorion and amnion, lacerating the former to a slight extent.—*Ibid.*

CASE XIX.—Seventh month; seized on the second day of *supposed* labor-pains by symptoms of internal loss of blood, and brought to the hospital in articulo mortis. Abdomen soft; uterus reaching to epigastrium; os closed; foetal and placental sounds absent; labor pains very slight and at long intervals. Ergot was given, but she died soon after.

Autopsy: Membranes entire; ovum bathed in a mass of blood; placenta found detached by coagula which covered two-thirds of the chorion. A zone, three inches wide, of adherent chorion forined the dam between the clots and uterine orifice.—GENDRIN; *Traité Philos. de Méd. Pratique*, p. 180, from *Brit. and For. Med. Rev.*, 1840, p. 83.

CASE XX.—At term; the physician was called in too late to do anything; the pulse too rapid to be counted, and the woman sinking; it was supposed to be a rupture of the womb, from the absence of external hemorrhage. The woman died undelivered.—A. K. GARDNER; *Am. Med. Monthly*, vol. 3, p. 431.

CASE XXI.—Æt. 30; eighth month of first pregnancy. After a walk, suddenly seized by constriction in epigastrium; painful tenesmus and severe pains in loins, followed by collapse. Os undilated; placental murmur audible, foetal absent. Neither abdomen nor uterus enlarged, but the latter in a state of constant tension; no external hemorrhage; no labor-pains, but at intervals violent colics and vomitings; membranes tense in spite of a serous discharge; vertex presentation.

Treatment: Anodynes and sinapisms for supposed colic; after two days ergot was given, the membranes punctured, the rigid os incised and version made, followed by many litres of clots. Mother and child both died.

Remarks.—Internal hemorrhage was not suspected until after delivery; and, as the observer remarks, had not version been made simply to deliver the woman of a dead child, the fact of a concealed hemorrhage “would have been lost to me and to science.” The cord was greatly shortened by two turns around the child’s neck.—M. LOIR; *Revue Médicale*, tome 93, p. 473.

CASE XXII.—Had been in labor twelve hours, when the physician found her exhausted; sweating; lips bloodless; pulse 130; very nervous and anxious; right arm and shoulder well packed into pelvis. Uterine

pains had ceased, and the membranes had broken six hours previously. Version was immediately resorted to, followed by a discharge of blood "exceeding anything I had ever witnessed." Both mother and child recovered.—S. MCKINNEY; *Phil. Med. and Surg. Rep.*, vol. 9, p. 275.

CASE XXIII.—At seventh month was bled; immediately syncope occurred, followed by colicky pains, which came on in paroxysms for twenty days. After two days of rest great pains commenced, followed by rapid labor. Clots of black blood attended the delivery. The placenta was ecchymosed and covered by a thick layer of blood. Mother recovered; child died.—J. L. BAUDELOCQUE; "*Traité des Accouch.*," par. 1083.

CASE XXIV.—At ninth month a great emotion caused violent foetal movements, succeeded by great uterine pain. Next day suffered from weakness; a feeling of tension and weight; was pale and had great pain. After four days natural labor set in. The centre of the placenta was hollowed out by a black and solid clot, larger than the fist. Mother recovered; child died.—M. DENEUX; *Journ. Général*, vol. 68, p. 340.

CASE XXV.—Æt. 36; multipara; at the eighth month, after a violent fit of coughing, she felt pain in the abdomen, and sent for a midwife. After twelve hours she suddenly went into an alarming state of syncope, and the labor not progressing, a physician was sent for, who found her dead, and the os uteri but little dilated. Cæsarean section was immediately made, and a live child extracted, but it soon died. There was no external hemorrhage; three quarts of liquid blood found

behind the placenta, which was adherent at the margin. M. DELAFORTERIE; *Ibid.*, vol. 29, p. 384.

CASE XXVI.—At the fourth month of gestation the woman supposed herself at term, so enormously was the womb distended; the os barely admitted the finger; legs œdematous. As the blood had been slowly accumulating, there was no syncope, or other hemorrhagic symptoms. Labor progressed, the membranes broke spontaneously, and she was, in about twenty-four hours, safely delivered of a shrivelled-up foetus, and clots that would fill a large chamber-pot. The placenta was very large and infiltrated with blood.—J. L. BAUDELOCQUE; *Traité des Hemorrhagies Internes, par A. C. Baudelocque*, p. 26.

CASE XXVII.—Æt. 32; sixth month; after a great fright foetal movements were very strong and then ceased; sensation of weight, and pains in the loins for five days, during which was feverish; breasts filled with milk; labor now commenced in a short time, safely delivering the woman of a dead child whose cuticle was desquamating. Placenta covered with a hard black mass of clots.—M. DENEUX; *Ibid.*, p. 28.

CASE XXVIII.—Æt. 30; ninth month of fifth pregnancy. During a feeble labor grew unaccountably weaker and weaker, without external hemorrhage; fainting fits succeeded, in one of which she died fifteen hours after labor began.

Autopsy: Placenta partially detached; the uterus distended by a prodigious quantity of blood; child's head firmly wedged into the pelvis, preventing egress to the blood.—BALME; *Ibid.*, p. 108.

CASE XXIX.—At the seventh month, after straining at stool with a dysentery, a slight show appeared; the foetal movement ceased; constant pains, but not of labor, lasted three days, then excessive weakness requiring prompt delivery. So soon as the membranes were punctured labor set in, and the woman was safely delivered of a dead child. A great quantity of old clots attended the delivery of the placenta.—MAURICEAU; Observation 633. *Ibid.*, p. 362.

CASE XXX.—A young woman in the seventh month, after a violent coitus, was seized by deep-seated uterine pain; in six hours the womb became enormously distended; no external hemorrhage; repeated syncope; no labor pains. The os was forcibly dilated; the membranes punctured, and version resorted to. A great quantity of clots attended the delivery of the placenta. Mother recovered; child died.—M. PÉRAUD; *Ibid.*, p. 364.

CASE XXXI.—Seventh and a half month of fourteenth labor; after a great fright had colicky pains; excessive paleness and syncope; the uterus so distended that suffocation was imminent in the horizontal position; shoulder presentation; labor pains weak and irregular; a bloody serous discharge, although the membranes were tense. The attending physician not understanding the case, after two days called in BAUDELOCQUE, who, finding os dilated, ruptured the membranes, which were full of blood, turned and delivered a dead child. A prodigious quantity of clots attended the delivery of the placenta. Mother recovered after many syncope.—BAUDELOCQUE; *L'Art des Accouch.*, par. 1084.

CASE XXXII.—Ninth month of sixth pregnancy. After violent retchings had syncope and collapse; felt as if she were going to burst; after five hours the surgeon arrived, who found her scarcely able to articulate; her abdomen prodigiously distended; no labor pains; no external hemorrhage. Version performed; mother died immediately afterwards; child dead. An immense quantity of blood attended the delivery.—HAMILTON; *Pract. Observ.*, part 2, p. 236.

CASE XXXIII.—Multipara; eighth month. Premature labor occurred within a fortnight after making violent efforts to escape out of a cattle-field. The child's cuticle was peeling off. In the central part of placenta was found a strong coagulum, the size of a tea-cup; "the adhesion of the edges of the placenta had saved the patient."—*Ibid.*

CASE XXXIV.—Æt. 21. Ninth month of first pregnancy. After washing clothes had a slight hemorrhage, weak labor pains, restlessness and syncope. In four hours the os became dilatable; fundus uteri large, tense, and firm, causing much distress; membranes had ruptured early; vertex presentation. Delivery by forceps. Mother recovered; child not stated. Great quantity of blood escaped after delivery.—J. BRAXTON HICKS; *London Lancet*, Feb. 19, 1867.

CASE XXXV.—Æt. 40; ninth month of ninth pregnancy. Aroused at night by a violent spasm of pain and a slight show. Pain so excruciating that the nearest surgeon was summoned; in one hour and a half she was so exhausted and collapsed that the severe pain almost ceased; os very little dilated: no signs of labor.

Membranes were punctured, ergot given, and expulsive pains soon followed, with delivery in half an hour, but four hours after first attack: An immense gush of blood followed delivery. Mother and child both died.—J. T. MITCHELL; *Lond. Obstet. Trans.*, vol. 3, p. 282.

CASE XXXVI.—Æt. 39; eighth month of eighth pregnancy. After a fit of coughing felt a strange pain and faintness, and sent for her doctor, who, finding os closed, and no evidence of labor, gave stimulant aperients for supposed indigestion and costiveness. After six hours he found her in great pain; the membranes ruptured; the os dilating; a large blood clot passed; vertex presentation and weak labor pains. Ergot was now given, but she died undelivered.

Autopsy: Placenta found completely detached by more than a quart of coagulated blood; child's head pressing against os uteri.—ROBERT DUNN; *Ibid.*, p. 285.

CASE XXXVII.—Æt. 35; multipara; eighth month. After house-moving had uneasiness in left side, with a slight hemorrhage, and rapid collapse from which she did not rally; not the slightest uterine action. She was too far gone to attempt version; stimulants, a tight binder, heat and transfusion were employed, but she died undelivered. A Cæsarean section was made, and a dead child extracted. The placental margin was adherent, excepting for two inches, and covered a coagulum weighing about two pounds.—R. GREENHALGH; *Ibid.*, p. 288.

CASE XXXVIII.—At term; missed a step in coming down stairs at night, next morning found by her physician collapsed, cold, nearly pulseless, and suffering

intensely. No labor pains, but one continuous pain of an intense, stretching character; abdomen tense; os as large as a florin; membranes tense, without intervals of relaxation; no external hemorrhage. Physician gave stimulants and "watched symptoms;" after some hours the membranes were punctured, when an immense gush of bloody fluid came away, followed by rapid delivery of a dead child, and three clots, each as large as the child's head; placenta cup-shaped; mother recovered.—*DR. BRUNTON; Ibid.*

CASE XXXIX.—Eighth month of fourth pregnancy. Whilst straining at stool suddenly fainted away, becoming pale and pulseless; uterus distended; membranes tense, and os dilating, although labor pains were absent; a deep-seated pain increased with the extravasation; no external hemorrhage. Reaction brought about by stimulants, heat, and friction; uterine action provoked by forcibly dilating the os and puncturing membranes, terminating in delivery. Mother recovered; child died.—*Miller's Obstetrics*, p. 249.

CASE XL.—Ninth month; immediately after the exertion of getting into a deep bath-tub, was seized with slight pain and with a trifling hemorrhage. Spent two days in bed, growing weak and pale, and the womb more and more distended, whilst a blood-tinged serum dribbled away. True labor now set in, with transverse presentation. When the os was dilatable the membranes were punctured, and version resorted to; dreadful syncopes and convulsions occurred, from the effects of which she died in "forty days." The child lived. Two hatfuls of old clots were expelled; the cord made two turns around

child's neck, and was torn across; hence, the liquor amnii being bloody, Baudelocque inferred that the hemorrhage was partly foetal, partly maternal; for which Hamilton criticizes him.—J. L. BAUDELOCQUE; *L'Art des Accouch.*, par. 1084.

CASE XLI.—Æt. 37; multipara; ninth month. During active labor an arm and shoulder became wedged so tightly in the pelvis that a large anodyne was given to assist version. In two hours this produced inertia; the pains ceased, the countenance was sunken; alarming collapse followed. Version was now made, and delivery of a dead child easily accomplished, attended by a large gush of blood. The uterus immediately contracted, but vomiting and syncope occurring, the woman died.—R. H. THOMAS; *N. A. Arch. Med. Surg. Science*, 1835, p. 24.

CASE XLII.—Sixth month of first pregnancy. Seized with pain and a sense of tightness in uterus, which was remarkably hard, with an accessory tumor jutting out. Treated by venesection and anodynes to prevent a supposed miscarriage. Next day true labor set in, with a breech presentation; after four hours the membranes were punctured, and rapid delivery effected. There was a firm clot behind the placenta, weighing over a pound; the cellular structure of the placenta had been destroyed by pressure, except a portion an inch in diameter. Mother recovered; child died.—*Ibid.*

CASE XLIII.—Æt. 31; eighth month of fourth pregnancy. For ten days had repeated attacks of syncope; finally restlessness, dyspnœa, feeble pulse, dull, heavy pain in left ilium supervened. No external hemorrhage; no foetal or placental sounds; face, lips, and

tongue bloodless. For half an hour had strong uterine pains, relieved by opium. Os uteri dilating, and delivery accomplished in two hours. Placenta was sacculated by an embedded lenticular clot. Mother recovered; child died.—C. C. HOWARD; *Nashville Med. Surg. Jour.*, vol. 4, p. 425.

CASE XLIV.—Æt. 40; seventh and a half month of fourth pregnancy. Vague abdominal pains, resembling those of the menses, succeeded to a fit of emotion; became pale and faint; vomited. Under stimulants rallied for twenty hours, and then fell into an alarming syncope; uterus now distended and tense; os dilated to size of a shilling; *membranes flaccid*; foetal head movable; no external hemorrhage; no signs of labor. When the nature of the disease was understood, the membranes were punctured; a binder applied; ergot given; followed in three hours by labor, and in three hours more by delivery. The uterus seemed full of clotted and fluid blood; the placental cellular structure completely obliterated and excavated; well illustrated by an engraving. Mother recovered; child died.—HENRY OLDHAM; *Guy's Hosp. Rep.*, vol. 2, p. 94.

CASE XLV.—Æt. 40; tenth pregnancy; taken with fainting on the least exertion; in two hours was collapsed, pulseless, and cold. Abdomen, from its size, supposed to contain twins; slight external hemorrhage after six hours. Although labor pains were absent, the os passively dilated, the head even descending low down in pelvis four hours after membranes were punctured, which was done fourteen hours after first attack. She

rallied under stimulants, but suddenly died undelivered, while the physician had gone down-stairs for his forceps.

Autopsy: The placenta almost wholly detached, and the womb distended with blood, enough to fill two chamber-pots.—*Ibid.*

CASE XLVI.—Æt. 38; eighth and a half month of eighth pregnancy. After drinking and carousing became cold and sweating; had pain; os dilated to the size of a shilling; head presenting; no external hemorrhage. The surgeon left, finding her intoxicated, and with no signs of labor; but six hours after returned and found her dead, with the membranes ruptured, but child undelivered.

Autopsy:—The uterine walls very thin; placenta flattened, thinned out, and entirely detached by about five pints of coagula.—*Ibid.*

CASE XLVII.—Æt. 36; seventh and a half month of third pregnancy. While sitting suddenly felt faint; bowels moved twice in rapid succession, followed by an indescribably distressing, bursting pain at the fundus uteri; abdomen tense and doughy; os barely admitting finger at first, but dilating, although the pains of labor were barely appreciable. There being no external hemorrhage, rupture of the womb was suspected; the membranes were therefore punctured, the child's head perforated, and delivery easily accomplished by the forceps, succeeded by "a most fearful gush" of some quarts of blood. The womb contracted well, but the mother died four hours after.

Autopsy: The womb was well contracted, containing

no blood, and was not ruptured.—L. HARRINSON; *Braith. Retros.*, part 27, p. 183.

CASE XLVIII.—During labor a woman became collapsed and died undelivered, no treatment being adopted, because the accident was not recognized.

Autopsy: Membranes entire; placental rim adherent and containing much clotted blood; illustrated by an engraving in tabulâ vi.—B. ALBINUS; *Annot. Acad.*, lib. 1, cap. 10, p. 36.

CASE XLIX.—Æt. 40; seventh and a half month of ninth pregnancy. After great fatigue, was suddenly aroused at night by a violent pain and distention of abdomen; in two hours utterly collapsed; could hardly articulate, and complained of the greatest torture and intolerable sensation of bursting; uterine shape natural; os dilating, although all signs of labor were absent; vertex presentation. Thirteen hours after attack the membranes were ruptured, and ergot given, which brought on labor and delivered the woman in two hours more. Version was not attempted, on account of the death-like state of collapse. The liq. amnii was colorless; a deep excavation in the placenta contained two pounds of coagula. Mother recovered; child died.—J. M. COLEY; *Lond. Lancet*, Jan. 1830, p. 498.

CASE L.—Æt. 42; eighth month of fourteenth pregnancy. Fainted away suddenly while sewing; in half an hour was in a state of profound collapse; slight pain at fundus uteri, and dull aching across the loins; os firmly contracted, and high up; vertex presentation; no external hemorrhage; no signs of labor. The membranes now broke; liquor amnii colorless; stimulants

and opiates given; a firm binder applied; the state of the os precluded version; transfusion was resorted to, but she died undelivered in thirteen hours from first attack.

Autopsy: Fœtus blanched; placenta entirely detached and the membranes for three inches around, by a clot filling a chamber-pot.—L. E. DESMOND; *Liverp. Med.-Chir. Jour.*, vol. 1, p. 82.

CASE LI.—“Presented the same characters and ran the same course” as the one above.—KING ELLISON; *Ibid.*

CASE LII.—Thirteenth pregnancy; each previous labor attended with hemorrhage. Without any assigned reason the membranes were punctured “without the setting in of labor or any particular symptoms.” Three days after she was faint, pale and pulseless; os closed; head presenting; no external hemorrhage. Stimulants brought on labor, which delivered the woman of a dead child and a clot as large as its head. Mother died.—DR. HARDY; *Ibid.*

CASE LIII.—At ninth month os would not dilate; head presenting; labor-pains little or none. Craniotomy was advised as soon as the os dilated, but she died undelivered on the evening of the same day.

Autopsy: Centre of placenta detached, forming a cup-like cavity filled with a coagulum.—CHURCHILL; *Ibid.*

CASES LIV. and LV. — No external hemorrhage whatever; in one caused by outward violence, in the other spontaneous. Both died undelivered.

Autopsy: Placenta entirely detached in both, except at its margin, and the cavity filled with an enormous

quantity of coagulated blood.—*Ibid.* from HARDY and McCLINTOCK's *Report on Midwif. and Puerp. Diseases*, p. 194.

CASE LVI.—In the latter months of pregnancy a very slight discharge of blood took place, not amounting to half an ounce, accompanied by alarming symptoms of exhaustion and debility. The small and rigid os precluded manual assistance, and she died undelivered.

Autopsy: Centre of placenta detached, margin adherent, forming a *cul-de-sac* in which one and a half pints of coagula were found.—SAUMAREZ and DENMAN; *New Lond. Med. and Physical Jour.*, vol. 6, p. 535.

CASE LVII.—Æt. 42; ninth month of tenth pregnancy. After a long walk seized with vomiting, which continued for twelve hours; became collapsed; a fullness in loins, and constant tenesmus; without labor pains until the os dilated, and the membranes were punctured; large clots attended the delivery. Mother recovered; child died.—JOHN AUDLAND; *Lond. Obstet. Trans.*, vol. 2, p. 65.

CASE LVIII.—Æt. 40; ninth month of eleventh pregnancy. Hemorrhagic diathesis; after two hours of labor, the membranes breaking and pains increasing, was seized with alarming collapse; os dilated; head low down; uterus firm and tense. Too exhausted to admit of artificial aid. She died twenty-four hours after giving birth to a dead (?) child, and with it an enormous quantity of blood.

Autopsy: Uterus blanched; several fissures found on its peritoneal surface, caused by the excessive distention.—J. BRAXTON HICKS; *Ibid.*

CASE LIX.—Æt. 38; seventh month of seventh pregnancy. While straining at stool was seized with vomiting, severe pain, blindness, and a slight bloody discharge. In two hours labor commenced, with head presentation; after six hours the membranes were punctured, and she was shortly after delivered of a dead child, but died in half an hour after. With the placenta came a great mass of clots.—J. HARRINSON; *Ibid.*

CASE LX.—Multipara; whilst lifting a pail of water felt something give way; next day was collapsed; os slightly dilated; membranes entire; uterus distended at fundus but without pain; no signs of labor; she died while preparations were being made to deliver her. Cæsarean section performed at once to save the child, but without success; the uterus full of blood.—J. H. MARSHALL; *Ibid.*

CASE LXI.—Æt. 40; ninth month of ninth labor. Whilst walking about the room, being in labor, was seized with faintness, was laid on the bed and died before the arrival of the surgeon, without any external discharge. Cæsarean section made half an hour after; child dead; placenta partly detached; uterus distended by an immense quantity of clots and blood.—J. T. MUSGRAVE; *Ibid.*

CASE LXII.—Multipara; eighth month. During labor at each pain she shrieked out in agony; uterus bulging on left side, tense and extremely tender. Rupture being suspected, version was made; mother and child *both recovering*. A large clot occupied the centre of the placenta, forming a basin-like depression.—W. O. PRIESTLY; *Ibid.*

CASE LXIII.—Æt. 23; ninth month of third pregnancy. After stepping over a gutter became faint and felt a pain; soon great distention, "as if she would burst," with severe pain at fundus, faintness, retching, os dilating without pains of labor; head presenting. After some hours, an external hemorrhage appearing, the tense membranes were punctured; ergot given; a binder applied, followed by labor, terminating in two hours. Mother recovered; child died. A large coagulum covered one-third of placenta.—DR. ELKINGTON; *Ibid.*

CASE LXIV.—Æt. 40; multipara; ninth month. After pumping water was seized by violent cramping pains in upper part of abdomen, which became firm and unyielding; became collapsed; os dilated without labor pains. After giving stimulants and opium surgeon left, but was recalled on account of an external hemorrhage. He now gave ergot, but she died undelivered. Cæsarean section immediately made; child died; placenta entirely detached by a large coagulum.—CLARKSON; *Ibid.*

CASE LXV.—Ninth month of seventh pregnancy; three days before labor, had a feeling of bursting in abdomen, which was very tender to the touch; a blood-tinged, watery discharge for twenty-four hours; membranes were punctured, and labor rapidly advanced. Mother and child *both recovered*. With the child came a great mass of clots.—J. HARRINSON; *Ibid.*

CASE LXVI.—Sixth month of tenth pregnancy. While stooping seized with severe pain and syncope at 9 A.M. No hemorrhage; os closed; foetal movements

absent; no signs of labor. Passed the day in alternations of collapse and reaction, with occasional vomiting; tightness of abdomen, which she could not indent; os dilating, but small towards evening. At 7 P.M. nearly filled a chamber-vessel with dark blood; felt much relieved, and went into labor. Ergot now given, the membranes punctured, and "a foot felt." Mother recovered; child dead and blanched; placenta small and pale.—T. HERBERT BARKER; *Ibid.*, from *Med. Institute No. 7*, p. 127.

CASE LXVII.—Æt. 32. Eighth and a half month of ninth pregnancy. After being thrown down in a quarrel seized by vomiting; great pain at umbilicus, followed by syncope. Os dilatable, but no signs of labor. The disease not recognized until a clot was forced out, whereupon the membranes were punctured and ergot given. Labor pains now commenced, but ceasing in three hours, the forceps were used. Mother barely recovered; child died; placenta accompanied by a very large clot; cord twisted around child's neck.—T. H. TANNER; *Med. Times*, 1851, p. 404.

CASE LXVIII.—Eighth month; while sitting, foetal movements, before strong, ceased; seized by faintness, syncope, and distressing distention of abdomen; a bulging of left uterine fundus; os dilating without labor-pains; membranes tense, and yet a serous discharge dribbling away. No correct diagnosis made until, after twenty hours, hemorrhage appeared; membranes now punctured; expulsive pains followed, and a dead child delivered, together with a large quantity of clots. Mother recovered, but long retained a pallid and blood-

less appearance.—WM. H. CROWFOOT; *Edin. Med. Jour.*, vol. 22, p. 306.

CASE LXXIX.—Eighth month; suddenly attacked by vomiting and slight oozing; no faintness or pain; os high up and undilated; labor pains absent. After six hours, a hemorrhage taking place, the membranes were punctured, and rapid delivery of a dead child and a great mass of clots ensued. Mother barely recovered.—*Lee's Midwif.*, Case 38 of *Uterine Hemorrhage*.

CASE LXX.—Ninth month. A sudden gush of blood and uneasy sensations in uterus; os closed and high up. In four hours slight pains began, with great faintness and sickness; os now dilated; vertex presentation. Membranes punctured; binder applied; os dilated by the hand and delivery accomplished in two hours; a basin nearly full of clots turned out. The prostration was too severe for version. Mother barely recovered; child dead.—*Ibid.*, *Phil. ed.*, p. 381.

CASE LXXI.—Æt. 33; eighth month of sixth pregnancy. For three days nausea, weakness, and violent epigastric pain. On the fourth leeches were applied for supposed colic, when alarming syncope and repeated vomiting took place. Os barely open; uterus normal in shape; foetal pulsations absent; vertex presentation. On the fifth day all ambiguity cleared up by a slight hemorrhage; a soft tumor found near the cervix uteri. On the sixth labor commenced; membranes very tense; a serous discharge; in twelve hours membranes broke, and soon after a dead child and a great quantity of clots were delivered. Absence of uterine distention

and the presence of hemorrhage attributed to malposition of the placenta near the cervix. Mother recovered.—P. GUILLEMOT; *Archiv. Générales de Méd.*, tome 2, p. 310.

CASE LXXII.—Æt. 28; sixth month of fourth pregnancy. For ten days facial neuralgia; vomiting; weakness, fever, dry tongue, cerebral congestion, and a sense of deadness and weight on right side. On the eleventh the membranes were punctured, by advice of Dr. Robert Lee; but labor did not set in until the next day, after repeated forced dilatations of the os. The nature of the complaint was not understood until after the delivery of abundant clots, together with a large placenta infiltrated with blood, and covered by a fibrinated clot the size of two fists. Mother barely recovered; child dead.—DR. EDWARDS; *Lond. Lancet*, Sept., 1846, p. 321.

CASE LXXIII.—Multipara; ninth month. While sitting near the fire, suddenly fainted and fell upon the floor, dying almost immediately. Twenty-three minutes after death, by the Cæsarean section, a *living* child was extracted from "a deluge of blood;" membranes ruptured near the placenta, which was two-thirds detached; os closed.—PETER BROTHERSTON; *Edin. Med. Jour.*, 1868, p. 930.

CASE LXXIV.—Æt. 40; ninth month of twelfth pregnancy. After ironing all day, complained of foetal movements. At 5 P.M. seized with most violent pain; in one hour was pale, pulseless, restless; os as large as a shilling; pains of labor very feeble; abdomen tumid; no hemorrhage; child's head low down. Stimulants given and a tight binder applied. At 8 P.M. three vio-

lent expulsive pains delivered a dead child, and an enormous quantity of clots, the mother dying twenty minutes after. Placenta torn across; the funis twice hitched around child's neck and ankle.—H. M. GOULD; *Brit. Med. Jour.*, 1862, p. 600.

CASE LXXV.—Eighth month of second pregnancy. A very plethoric woman, while at work before a large fire, suddenly fell down, crying out she was dying. Pulse small; sweat cold and copious; a soft tumor found on right side of abdomen; continued collapsed in spite of stimulants. Labor brought on by puncturing membranes; delivery hastened by forceps. Placenta adherent, requiring the introduction of the hand, and partly detached by a firm clot one pound in weight. Mother recovered; child dead.—M. HOESENDONCK; *Monthly Retros.*, 1848, p. 120; from *Revue Médico-Chir.*, January, 1848.

CASE LXXVI.—Æt. 35; ninth month of sixth pregnancy; very plethoric; jumped backwards from a toad; instantly seized with a severe pain in the left side; pale and faint. For four days "she felt wretchedly," keeping on her back, and then went into an extremely slow and feeble labor; the membranes were therefore punctured. Black clots, one as large as the child's head, came with the placenta. Mother recovered; child dead, its cuticle desquamating.—Prof. ELLERSLIE WALLACE, Jefferson Med. Coll., Philadelphia.

CASE LXXVII.—Æt. 24; ninth month of first labor. After a ride severe uterine pains; continued miserable for two weeks. Labor then began, and proceeded for fifteen hours, when it ceased, the patient becoming ex-

cessively pale and pulseless. The membranes immediately punctured, and the forceps applied. Mother recovered; child was born alive, but never breathed. Placenta one-third detached, infiltrated by clots, one being half its size, firm and black.—*Ibid.*

CASE LXXVIII.—Æt. 28; ninth month of second labor. Great dropsy of the amnion; the membranes suddenly yielded, without any symptoms of labor. Four hours after, intense and constant pain in abdomen; pale, faint, and almost pulseless. Feeble pains now dilated the os; uterus large and doughy; vertex presentation. Ergot given; a tight binder applied. Mother recovered; child dead and bloodless. An immense quantity of coagula attended the delivery.—JOSEPH BELL; *Glasgow Med. Journ.*, 1854-55, p. 6.

CASE LXXIX.—Æt. 31; eighth month of fifth pregnancy. The waters escaped, followed by slight uterine pains. In two hours syncope; constant and severe pain in uterus; uterus irregular, soft, and doughy; os well dilated; child's head low down. A firm binder applied; when jactitation and yawning began the forceps were applied. Delivery of a pale, bloodless, and dead child, and a great quantity of clots. Mother never regained her health, although robust before.—*Ibid.*

CASE LXXX.—Æt. 40; ninth month of sixth pregnancy. Abdomen enormously distended for six months from dropsy of the amnion. Labor commenced by lumbar pains, a slight oozing of blood, and escape of waters; os dilating; head presenting. After eight hours, sudden syncope, with severe abdominal pain; uterus large and soft. Version immediately resorted

to; some difficulty in introducing hand, on account of the tight embrace of os around the foetal head. Mother just escaped with her life; child bloodless and dead. A frightful quantity of clots and liquid blood gushed out after delivery.—*Ibid.*

CASES LXXXI., LXXXII., LXXXIII. were seen by Sir James Simpson; two died undelivered; one probably recovered.—*Ibid.*

CASE LXXXIV.—Æt. 34; ninth month; multipara. After hard work attacked by syncope, retching, restlessness, dimness of vision, coldness, and tinnitus aurium; an accessory tumor on fundus uteri doughy, and the seat of a bursting pain; labor pains absent; os barely admitting the finger. Ammonia and brandy given until a correct diagnosis was made; the membranes were then punctured, ergot given, and a binder applied. Delivery effected by forceps; the placenta bell-shaped, and hollowed out by several large clots. Mother recovered; child bloodless and dead.—J. G. WILSON; *Ibid.*, 1861–1862, p. 440.

CASE LXXXV.—Ninth month. Sudden and alarming syncope interrupted her while at work; one fainting fit followed another in rapid succession, and she died in two hours, without any external hemorrhage or signs of labor.

Autopsy: A doughy accessory tumor bulging out of the fundus uteri; membranes entire; the placenta centrally detached by a very large quantity of blood, but adherent at the rim; the child bloodless; head presenting.—*Ibid.*

CASE LXXXVI.—Æt. 36; seventh month of fourth

pregnancy. Barely got home from a long walk on account of faintness, and soon after fell into an alarming collapse; great suffering from distention of abdomen, which was equal to that at term; no signs of labor; no foetal sounds; os undilated. After being in this state ten hours a hemorrhage began; the membranes were at once punctured, the os forcibly dilated, and version made; the child's head was separated by the violent traction required at the rigid os. Mother recovered.—G. E. STANGER; *Brit. Med. Journ.*, 1861, p. 440.

CASE LXXXVII.—Multipara; seventh month; previous labors always attended with flooding. After pulling up vegetables, passed a bad night; was found by her physician at 6 A.M. in an alarming state of collapse; abdomen hard, distended, and feeling as if it would burst; soon after died.

Autopsy:—Membranes entire; placenta detached; foetus embedded in one enormous clot.—*Ibid.*

CASE LXXXVIII.—Attended during supposed labor by a practitioner; but her sudden death caused so great a suspicion of malpraxis, that a coroner's inquest was summoned. Autopsy: A detached and fissured placenta; and the womb distended by several pounds of blood.—JOHN ARMSTRONG; *Ibid.*, 1861, p. 413.

CASE LXXXIX.—Æt. 40; ninth month of eighth pregnancy. Four hours after labor set in, membranes accidentally broken; pains normal; os dilating; face presenting. Soon after, a hemorrhage of about eight ounces took place, and the pulse began to flag, and soon ceased; this was the only "index to the frightful danger," for there was no syncope, yawning, faintness, &c.

The head was opened, but, a foot being found near the os, version was made; placenta detached, presenting two deep fissures on the maternal surface; uterus full of clots. Mother died.—*Ibid.*

CASE XC.—Ninth month of fourth pregnancy. Intense abdominal pain; the abdomen less firm than natural; all the symptoms of collapse; os dilating without labor pains; head presenting. Ergot was given, the cervix irritated, the membranes punctured, when a vast amount of coagula were expelled, relieving patient and inducing rapid labor. Funis twice twisted around child's neck. Mother and child both recovered.—H. JAMES; *London Lancet*, 1860, vol. 2, p. 428.

CASE XCI. — Eighth month. After a violent effort, felt pain in abdomen; was faint and sick for twenty-eight hours, when a slight gush of blood took place. A surgeon was now sent for, who found her collapsed and suffering from abdominal pain; os dilatable; head presenting; no labor pains. Membranes at once punctured, ergot given, labor began, terminating in twenty minutes by the delivery of a dead child; an enormous quantity of clots, and a placenta one-third infiltrated with blood. Although a stout woman, the mother barely rallied.—*Ibid.*

CASE XCII.—Æt. 41; ninth month of ninth pregnancy. Awakened at night by great abdominal pain, faintness and shivering. In six hours a slight hemorrhage began; physician found her collapsed and pulseless; os partially dilated; labor pains absent. Died undelivered.

Autopsy: Placenta partially detached; many coagula

at fundus uteri.—F. J. LOWES; *Med. Times and Gaz.* 1860, vol. 1, p. 609.

CASE XCIII.—Æt. 37; multipara; ninth month. Feeble labor pains commenced at 6 A.M.; at 10 A.M. the surgeon found her greatly exhausted, faint, with a feeble pulse; os small; abdomen tumid and yielding to pressure. A cordial given for supposed indigestion; at 1 P.M., after several violent pains, died undelivered. No autopsy allowed.—WM. WILDSMITH; *North of Eng. Med. and Surg. Jour.*, vol. 1, p. 446.

CASE XCIV.—Ninth month of eleventh pregnancy. Severe pain, excessive sinking and coldness of surface; only two pains; died undelivered. No autopsy allowed, but death attributed to a concealed hemorrhage.—*Ibid.*

CASE XCV.—Ninth month. During a very feeble labor, pain, syncope, and coldness took place. "Speedy expulsion of ovum decided upon;" a clot weighing sixteen ounces followed the delivery. Mother recovered; child (?)—*Ibid.*

CASE XCVI.—Ninth month. Symptoms as above; died undelivered in six hours. Autopsy: An eighteen ounce clot at fundus uteri, and a rent in the placenta two and a half inches long.—*Ibid.*

CASE XCVII.—Æt. 29; eighth month. Aroused at night by great dyspnœa; pulse 140; had great anasarca from renal disease and phthisis; died undelivered in forty minutes. Cæsarean section showed an adherent placenta, and a large quantity of blood effused.—J. C. ATKINSON; *Lond. Lancet*, 1839-40, vol. i. p. 727.

CASE XCVIII.—Ninth month of first pregnancy. Aroused at night by flooding, which soon ceased; had no pain; “felt queerish.” Eleven hours after, labor set in, but feeble; no more hemorrhage; the os had steadily dilated before labor commenced; membranes punctured. Child exsanguinous and flaccid; a clot as large as its head followed the delivery; mother recovered.—Geo. KING; *Provin. Med. & Surg. Journ.*, March 31, 1852.

CASE XCIX.—Æt. 20; at the end of eighth month. Thrown out of a sleigh on New-Year’s Day; five days after had great pain in abdomen; this being attributed to metritis, she was bled. Later in the evening symptoms of labor; and collapse while in a vapor bath, with some hemorrhage. Jan. 6th, at 5 A.M. Dr. Martin was called in; he found her in alarming collapse; os barely an inch in diameter and very rigid; fundus tense and painful; pains rare and inefficacious; complained of increased tension of abdomen, and extension of fundus. At 8 A.M., the patient was so nearly dead that transfusion was resorted to; reaction set in; labor more effective; os dilating, so that at 10 o’clock the forceps were applied. Child dead; two-thirds of placenta compressed; with it came two pounds of black blood; mother recovered, although another transfusion was necessary for a post-partum hemorrhage.—Prof. MARTIN; *Med. Times*, 1861, vol. i., p. 501.

CASE C.—Multipara; ninth month. During labor excruciating pain took place on one side; the abdomen enormously distended; the collapse frightful; no external hemorrhage. The attending physician, not understanding the difficulty, sent for Dr. Wilson, who, finding

the os well dilated, immediately ruptured the membranes and applied the forceps. The tenseness of the membranes was such that, when punctured, the bloody liquor amnii spattered a wall five feet distant, and gushed up the doctor's sleeve and arm, so as to deluge his body linen. Mother and child both died.—DR. ELLWOOD WILSON, Philadelphia.

CASE CL.—Multipara at term. During labor a most agonizing pain took place over placenta, followed by great faintness, collapse, distention of abdomen, and a marked accessory uterine tumor. Dr. Wilson, being sent for by the family physician, finding the os dilatable, immediately ruptured the membranes, and delivered the woman, by version, of a dead child. No blood following delivery, and the uterus remaining very large, the placenta was found centrally detached, but completely adherent at the rim, and containing a chamber-vessel nearly full of blood. Mother recovered, and, what is remarkable, had the same trouble in each of her three succeeding labors, ushered in by the same train of symptoms, and always safely treated by puncturing membranes, large doses of ergot, and version.—*Ibid.*

CASE CII.—Active pains forced the foetus into the os uteri and then became feeble, and soon after wholly ceased. The woman became weak, but the young physician, thrown off his guard, remained inactive. The third day of labor, on account of the great prostration and other dangerous symptoms, a consultation of all the local physicians was demanded, but too late to save the woman, who died, in the language of the narrator, "*quasi angue latente in herbâ necata.*"

Autopsy : The child's head so firmly grasped by the os uteri that, although the womb was distended with blood, not one drop had appeared externally.—DE-MANGEON; *De fallaci atque nocuo obturamenti in hæmorrhagiis uteri cohibendis usu*, p. 16.

CASES CIII. and CIV.—Placenta suddenly detached before labor in each case; uterus largely distended; both mothers recovered, children (?).—DR. CAPPIE; *Edinb. Med. Journ.*, April, 1869, p. 940.

CASE CV.—Æt. 30; ninth month of pregnancy. After a violent fit of anger was seized with trifling flooding, and yet died before assistance could be rendered to her.

Autopsy : Twins were found bathed in blood, with which the uterus was distended.—M. PEU; *Accouchements par Jacquemier*, vol. 2, p. 248.

CASE CVI.—A woman of weak constitution lost about one ounce of blood externally and died. At the autopsy, one pint and a half were found in the uterus.—MERRIMAN; *Ibid.*, p. 250.

The following additional cases have been published, but in journals out of my reach. One by Godfrey; *Med. Circular*, vol. 15, p. 49. Three by Faloon, in the *Association Journ.*, July, 1853. Two in the *Recueil Périodique*, tom. 2, p. 15, and tom. 3, p. 1.

Pathology.—Concealed accidental hemorrhage of the gravid womb takes place under the following circumstances. (a) When the placenta is centrally detached and the blood accumulates in the *cul-de-sac* formed by the firm adhesion of its margin to the uterine wall. (b) When the placenta is so detached that the blood

escapes into the uterine cavity behind the membranes near the fundus. (c) When the membranes are ruptured near the detached placenta, and the effused blood mingles with the liquor amnii. (d) When the presenting part of the foetus so accurately plugs up the maternal outlet that no existing hemorrhage can escape externally. Typical examples of each variety are found in the collection of cases, although they are often more or less combined. The blood effused is at first maternal, but often a foetal hemorrhage is superadded, especially in those cases in which the placenta is centrally detached, and adherent at the margin. (*Archives Générales*, 1839, tom. v., p. 417.) This is brought about by the great tension to which the placenta is subjected, causing fissures which tear open the vascular loops and branches of the umbilical vessels, as in Cases 13, 74, 88, 89, 96. The mortality among children is therefore enormous, most of them presenting at birth a completely blanched and bloodless appearance.

Without trenching too far upon the moot points of placental anatomy, let us inquire into the conditions and limitations of this formidable complication of labor. In the earlier months of gestation, previous to the development of the placenta, the membrana decidua is in close vascular connection with the entire internal surface of the womb, and blood in fatal quantities may flow from any point on this surface. But the attachment between the ovum and the uterine walls is so frail,—there being no line of demarcation, no limiting barrier, such as an adherent margin of the placenta,—that, after rupturing all intervening utero-deciduous vessels, the

blood speedily shows itself at the os uteri. At later periods of gestation the sources of uterine hemorrhage are limited to that portion of the uterus occupied by the placenta, but the latter organ is not now sufficiently large or elastic to contain a fatal accumulation of blood; sooner or later its margin becomes detached, and the imprisoned fluid readily escapes externally through the space existing between the decidua vera and the decidua reflexa, which is called the "decidual cavity," first pointed out by Jacquemier (*Archives Générales*, 1839, tom. v., p. 399), and also affirmed by W. Tyler Smith and others. (*Lectures on Obstetrics, Am. ed.*, p. 113.)

Although my statistics show exceptions to this rule, yet that period of utero-gestation, from the seventh month up to term, presents conditions far more favorable to a concealed hemorrhage. The uterine vessels have now attained a great calibre; the placental disk measures the extent of a vast hemorrhagic area; its tissues are more spongy and elastic, whilst the very nature of its functions demands that its margin should be the firmest point of adhesion to the maternal surface. (*Murphy's Midwifery*, p. 440. *British and Foreign Medical Review*, vol. x., p. 90.) Furthermore, that portion of the uterus over which the placenta is implanted is so perforated and honeycombed by immense vessels and sinuses, at the expense of muscular tissue, that its contractile power is impaired; it becomes spongy in its character, and yields under the tension of the extravasation, forming a lateral bulging of the uterus at that point, which is termed an "accessory tumor." On the other hand, should the blood

dissect its way from under the placenta, it will the more readily lodge behind the membranes; for the "decidual cavity" no longer exists, being obliterated by the coalescence of the whole aspect of the decidual surfaces. Finally, the contractile power of a hollow muscle being in inverse proportion to the elongation of its fibres, a uterus, at or near term, is less likely to resent further distention, by an extravasation of blood, than one in the earlier months of pregnancy; whilst a multiparous uterus, whose fibres have become weakened by repeated elongations, is more obnoxious to this accident than that of a primipara.

It may here be well to reply to an objection originating with Velpeau, viz.: "*How is it that an effusion, capable of dilating beyond measure the walls of the uterus, does not invariably rupture the membranes and become effused into their cavity?*" Should the os uteri be closed, the membranes, however delicate, cannot, other things being equal, rupture any sooner than the uterine walls, for the sum of the resistance of the enclosed liquor amnii, being equally distributed, exactly counterbalances the sum of the pressure exerted by the effusion. Thus a bladder filled with water can be sunk without injury to the bottom of the ocean, when an empty metallic vessel shall be crushed in by the pressure. If, however, the os uteri dilate, the membranes will rupture at that unsupported point, and not at the seat of the effusion, where they are shored up by the liquor amnii. Cases 16, 31, 38, 40, 73, and 100 are the only exceptions to this rule. Again, what student has not wondered at the force required to perforate mem-

branes which, after delivery, are found too delicate to sustain the weight even of the placenta? But here the first effect of the digital pressure is to give a much needed support to an unsupported portion of the membranes; and other things being equal, it is only when this pressure shall exceed that of the uterine contraction exerted upon the same point, that the membranes are ruptured.

Such, then, are the factors favoring the concealment of an accidental hemorrhage; but the hydrostatic pressure exerted by the bleeding vessels is so great, the uterine walls are so dense, and so unyielding to rapid distention, that fortunately the blood usually dissects its way to the os under the placenta and intervening membranes long before any great loss has happened. It is well, however, to bear in mind that the amount of blood appearing externally is occasionally trifling when compared to that insidiously accumulating behind the placenta and membranes; hence the cardinal rule in accidental hemorrhages is to measure the loss of blood by the severity of the collapse. On the other hand, not only shall a dangerous hemorrhage take place under the placenta long before it can burrow its way to the os uteri; but even death shall occur without the appearance of a single drop of blood upon the patient's linen to tell the tale, and warn the unsuspecting physician of the impending danger.

Causation: For reasons already given, the liability to a concealed accidental hemorrhage bears a manifest relation, not to the age of the woman, but to the number of her confinements. Thus, out of sixty-four cases in which this circumstance is noted down, eight were primiparæ;

two were in their second pregnancy; one in her third; seven in their fourth; three in their fifth; five in their sixth; three each in their seventh and eighth; five in their ninth; four in their tenth; three in their eleventh; one in her twelfth; two each in their thirteenth and fourteenth pregnancies, whilst fifteen are called *multi-paræ*. In forty-two the number of the pregnancy is not stated; but whenever the age is given instead of this fact, the great majority have passed the middle of the child-bearing period. Again, the liability increases in proportion as gestation approaches its period of completion, until it attains its maximum at term, or during the process of parturition. Thus, out of eighty-nine cases in which the period of gestation is noted, one occurred at the third month, two at the fourth, six at the sixth, thirteen at the seventh, twenty-two at the eighth, and forty-five either at the ninth month or at term.

The circumstances leading to the detachment of the placenta are various. In twenty-six cases, probably from irregular uterine contractions, it occurred during the process of labor; thirty-seven cases could be traced to external violence or undue exertion; in seven the causes were purely emotional; and ten took place during sleep, the patient being aroused by the attendant pain. The following are some of the specified causes: "Blows received on the abdomen;" "missing a step;" "stepping over a gutter;" "lifting a pail of water;" "stooping over;" "falling down a flight of stairs;" "a violent coïtus," etc.

Cases 52, 58, and 87 give a hemorrhagic diathesis as the cause; straining at stool in Cases 29, 39, and 59;

dropsy of the amnion in Cases 78 and 80 ; foetal movements, spasm, and vomiting respectively in Cases 68, 55, and 32.

Cases 11, 14, 22, 28, 31, 36, 40, 41, 66, 80, and 102 show that an internal hemorrhage may be concealed by the presenting part becoming tightly wedged in the cavity of the pelvis. This holds true especially in transverse presentations; for not only does the soft shoulder mould itself to the os uteri, but the placenta is apt to become detached by the distortion of the womb in accommodating its walls to the irregular surfaces of the foetal body.

Cases 12, 40, 47, 67, 74, and 90 go to prove that the placenta may become detached through shortening of the funis. Finally, a cough seemed to be the agent in Cases 25, 36, and 97.

Nor is this kind of hemorrhage peculiar to the human race. In examining the uterus of a pregnant rabbit, which died from pleurisy, Brown-Séquard found that the cough had produced a hemorrhage into the amnios, and that the foetuses were bathed in blood. (*Gazette Médicale*, 1850, p. 558.) Ingleby also relates (*Uterine Hemorrhage*, p. 137) that upon inspecting the gravid uterus of a cat, supposed to have died under the expulsive efforts, the right cornu was distended by a quantity of dark blood, and the placenta was found lacerated; the hemorrhage proving fatal, although not a drop of blood had escaped externally.

In the face of such numerous examples, it seems hardly necessary to notice an objection urged by Velpeau and others, *that the womb containing the product of conception constitutes a plenum, and that therefore*

outward violence cannot produce a mechanical displacement of the placenta. But as this has proved a stumbling-block to many, it may as well be answered. In the first place, the existence of the decidual cavity up to the very last months of pregnancy, and the alternate flaccidity and tenseness of the membranes in the process of labor, even before the dilatation of the os uteri, disprove the *plenum* theory. On the other hand, if the womb containing the ovum constitutes a *plenum*, *à fortiori* shall the brain and investing membranes, contained within the cranium, constitute a *plenum*. Yet, in the latter, concussions and outward violence produce apoplectic effusions, by the mechanical rupture of blood-vessels running between the cranium and dura mater.

Let us now inquire into the cause of that most constant symptom, an alarming and often fatal state of collapse, which observers describe by superlatives. This is evidently not wholly due to the hemorrhage, for in many instances the amount of blood lost to the circulation was not enough to produce these effects. Thus in the following fatal cases, viz., Nos. 18, 10, 96, 54, 37, and 36, the amount of internal hemorrhage was estimated, respectively, at "four ounces," "seventeen ounces," "eighteen ounces," "one and a half pints," "two pounds," and "one quart." Surely, these amounts are not sufficient to produce death; compare them with the thirty, forty, and even sixty ounces of blood drawn from the veins of women attacked with puerperal fever or eclampsia.

The simple distention of the bowels by flatus will alone produce alarming prostration and even death; *à*

fortiori must an excessive distention of the womb, and the great pressure thus brought to bear upon adjacent viscera, produce fatal collapse. In cases 1 and 58, the extreme tension caused a rupture of the uterine walls, and probably great mischief to the nerves with which they were supplied. The sudden distention of the uterine cavity by intra-uterine injections will cause shivering, vomiting, collapse, sudden and severe pain at the seat of affusion, and other phenomena characteristic of a concealed hemorrhage. Death indeed has repeatedly occurred from the shock of sudden distention, where the uterine douche has been used;* nor need we wonder at this when we are told by Simpson that rupture of the uterine walls has positively happened from the injection of a few ounces of water.†

These facts warrant the inference that concealed accidental hemorrhage is by no means so rare a complication as it is represented to be by authors, or as might be inferred from the few cases on record. There is little doubt in my mind but that rupture of the uterus, especially in the earlier months of gestation, either with or without prior structural disease of the uterine wall, is due to this cause. Take, for instance, the cases reported by Robin and Dezeimeris (*L'Expérience*, tom. iii., pp. 207 and 241) of spontaneous rupture of the uterus, one each at two, two and a half, and three months' gestation; four at the fourth, two at the fifth, and four at the sixth month, etc., produced by dancing, a false step, a fit of anger, chopping wood, hard work,

* Barnes' Lectures: *Med. Times & Gazette*, Jan'y 30, 1869.

† *Edinb. Med. Journal*, 1862.

etc. The autopsy usually revealed no alteration of tissue, save a thinness of the walls at the seat of rupture. Whilst Latour of Orleans (*Hist. Philos. et Méd.*, tom. 1, p. 209) and Trask (*Am. Journ. Med. Sciences*, vol. xv., p. 378) both narrate cases of rupture of the non-gravid womb from the extreme tension of accumulated blood.

Again, in examining the cases of ruptured uterus collected by Trask (*American Journal of Med. Sciences*, vol. xv., 1848), an unbiassed observer will be struck with the number which can be referred to a concealed hemorrhage. Thus, Cases 276 and 277 afford examples of rupture at the fundus uteri: in the one, "half the placenta was found protruding from its cavity into that of the abdomen;" in the other, "an opening of a similar character was found, the placenta having been withdrawn during life," but several days after the birth of the child. In another instance "the attenuation of the placental portion of the uterus had actually produced a breach of surface, and a portion of the disrupted placenta had partially entered the belly;" in yet another, "a peculiar hollow flaccid appearance, like a large bag, corresponded with the fundus of the left side," and "it was evident the placenta had been situated in this bag." (*Lond. Lancet*, 1839-40, vol. 1, p. 635.) In Cases 24, 28, and 205, the rupture was probably due to a concealed hemorrhage; in the last the patient "was awakened from a sleep by a cramp." Cases 20, 30, and 236 "show," according to Trask, "that rupture may follow intense emotion," "analogous to rupture of the heart under violent mental excitement;" whereas, in my opinion, the phenomenon is

better explained by the distention of the uterus from a hemorrhage under the placenta. In seven cases rupture was limited to the peritoneal coat alone, just as in Cases 1 and 58 of my collection. Case 31 of Trask's collection is, in my opinion, so satisfactory an example of rupture from this cause that I transcribe it in full. "Mother of six. At beginning of the eighth month seized with *abdominal pains* and *bilious vomiting*; in ten hours *watery discharge*, with *coagula*, from the vagina, and eight hours after was delivered of *twins* by natural efforts. Died in about ten hours from supposed rupture. Post-mortem: Some ecchymosis of anterior part, and several *transverse rents* more or less convex toward the fundus, through the *peritoneal coat* only, from one and a half to two inches long, as if made with a pen-knife, and one three inches long and two broad." The italics are my own, to emphasize, first, the "*abdominal pains*;" next the "*vomiting*," in ten hours a "*watery discharge*," with "*coagula*," followed by rents in the "*peritoneal coat*," "*as if made with a pen-knife*." Here is a train of symptoms very analogous to those of my own case; the "*coagula*" evidently coming from an internal extravasation, and the "*watery discharge*" being the blood serum squeezed out of the extravasated clots, for so long as the rents were limited to the peritoneal coat, the resulting hemorrhage could not possibly appear externally, but would accumulate in the cavity of the abdomen.

Symptoms.—In the rules laid down for the diagnosis of this obscure disease by most of our standard authors, there is a want of clearness and accuracy which may

lead to the embarrassment of those who, like myself, consult them. Meigs gives as symptoms, "weakness; *dull pain* in the womb; *suddenly increased size* and tension of the organ; frequency and smallness of pulse; paleness, yawning and sighing; and syncope." Hodge uses the following language: "If, however, there be *uneasy sensations, sometimes amounting to pain* in the uterus, and if, by careful examination, this organ should be found irregular in its form, with a marked prominence, with a *soft*, although *firm* character, and if evidences of general weakness and exhaustion should appear, without any other reason, it may be inferred that hemorrhage exists in the uterus, although there be no vaginal discharge." Bedford is even less explicit, making no allusion to pain as a symptom in the following extract: "The *only* and oftentimes fatal evidence of the central separation of the placenta will be the exhaustion of your patient; the *face grows pale*; the *heart becomes weak in its pulsations*; the countenance presents the appearance of serious dilapidation."

These authors are quoted because their works are the text-books of American students; yet how can such vague terms as "a dull pain," "uneasy sensations, sometimes amounting to pain," describe the untold agony of my patient? How can the "suddenly increased size" of the uterus be estimated by the physician who has, most probably, been summoned in an emergency, or has never before examined the womb? To add to the confusion, Cazeaux lays stress on "the rapid development of the belly," * while Simpson remarks that "this distention

* Treatise on Midwifery, 4th Am. Ed., p. 689.

can, it has been alleged, be sometimes, though I should conceive very rarely, actually traced externally in the enlargement of the absolute volume or bulk of the uterus." (*Obstetrical Works*, 2d. Series, p. 381.) Again, how can we reconcile such apparently contradictory statements as "increased tension" of the womb, with its "soft although firm character?" Finally, in Bedford's description are any symptoms given other than those of a common fainting-fit? In so fatal a disorder, symptoms are demanded more incisive, more striking than those above given.

An analysis of the foregoing one hundred and six tabulated cases shows that by far the most frequent symptom is *an alarming state of collapse*, carrying dismay into the heart of the bystander. Every detailed example, without exception, presents most of its characteristics, such as coldness of the surface, excessive pallor, feebleness of the pulse, yawns, sighs, dyspnoea, restlessness, and retching.

Pain holds the second rank in frequency. Out of these cases, sixty-four exhibit every grade of suffering, from the "queerish feelings" of Case 98 up to the "greatest torture" and "agonizing shrieks" of Cases 49 and 62. In only two instances, viz., Cases 60 and 69, is it stated positively that the symptom of pain was absent; whilst it was most probably present in those cases which lack in details. In the great majority the pain was referred to the site of the placenta, and was of a bursting character. The language used by different observers to describe this pain is so graphic and instructive as to bear quotation. "Severe pain about

the fundus uteri, and great distention as if she would burst;" "extreme pain," "violent pain in the abdomen;" "suffering the greatest torture, as though the abdomen would burst;" "very violent cramping pain;" "a most unusually violent and protracted spasm of the abdomen;" "a state of intense suffering;" "intolerable anguish." F. Ramsbotham alludes to "a constant cramp-like pain," and says of his own cases, "they have all been attended with this distressing pain or feeling of tightness;" Cazeaux also includes "colicky gripings" among the symptoms. In a very few cases where the loss of blood was rapid, the collapse immediate, and the shock to the nerve centres overwhelming, as in railroad accidents, so the prostration and syncope were too great for pain to be appreciated. Possibly in the few painless cases on record the physician has reached the bedside of his patient after she has passed beyond the stage of suffering into that of death-like repose; and out of the tumult of dismay and anguish attending such a distressing scene, he recalls only those symptoms which he himself has observed.

The third most constant symptom is the *absence or extreme feebleness of the pains of labor*. Of the former, twenty-eight examples are tabulated; of the latter, fifty-six; but of these, the majority presented no labor pains until the membranes were ruptured, either naturally or artificially. In only twelve were the pains normal from the outset.

Next follows a *marked distention of the uterus*, which produces those painful sensations of "bursting," that burden of every cry of the sufferer. Out of one hun-

dred and six examples, forty-two presented this symptom, although not always recognized during the life of the patient. In Cases 32 and 80 this distention is termed "prodigious," "enormous." In Cases 8 and 45, twins were suspected. In Case 26, the woman in the fourth month of gestation supposed herself to be at term. Finally, in Case 9, so eminent an obstetrician as Chevalier opened the body of a woman to save the life of a three months' foetus, which, from the excessive uterine distention, he believed to have arrived to term.

Very often, before the lapse of many hours, *a show of blood*, ranging from an ooze to a gush, will clear up all obscurity; but this trustworthy symptom does not usually occur at the outset of the attack, but at a time when it may be too late to interfere. A diagnosis should not therefore depend upon its presence, but simply be affirmed by it. The blood expelled is usually dark and grumous. Out of ninety-nine cases, twenty-seven exhibited this symptom, whilst in seventy-two it was entirely absent.

Levret, J. Hopff, Leroux of Dijon, and Baudelocque have laid great stress upon the presence of an "*accessory tumor*," or a circumscribed lateral bulging out of the uterine walls, as pathognomonic of a concealed accidental hemorrhage. But this can only happen when the margin of the placenta remains adherent for any length of time, and is not therefore a constant symptom. Cases 3, 12, 16, 17, 42, 62, 68, 75, 79, 84, 85 and 101, are the only ones out of my collection in which this tumor was observed. When present it may easily be mistaken for a rupture of the uterus, with the child's

head, or a portion of its body, protruding through the rent.

Some writers contend that the great pressure exerted by the extravasated blood should invariably put the membranes to their utmost stretch, and that this *tenseness* should become an important element of diagnosis. But this is not borne out; Cases 1, 16, 22, 31, 38, 39, 63 and 71 being the only ones which note it, whilst in Case 44 the membranes were absolutely flaccid.

In Cases 1, 8, 21, 31, 40, 65, 68 and 71 a *serous discharge* took place, which was mistaken for the waters of the amnion, until an examination proved the membranes to be still tense and unruptured. This was undoubtedly the liquor sanguinis squeezed out of the extravasated clots, and, as indicating their presence, should have due weight in the diagnosis. I cannot withhold the opinion that this symptom must be a more constant one than these statistics show. It ought to be present in every case when any blood appears externally, and ought not to be absent in many others; for the serum of the blood will flow through channels too minute for the passage of its fibrin.

The rupture of the membranes near the seat of the effusion, and the consequent appearance of *blood in the liquor amnii*, holds as a symptom the lowest rank in the order of frequency. Cases 16, 31, 38, 40, 73 and 100 are the only ones indicating its presence.

Reasoning *à priori* from the nature of this accident, viz., a detachment of the placenta, the foetal pulsations and the placental murmurs should invariably be either extremely feeble or entirely absent; and yet this cir-

cumstance is mentioned only in Cases 1, 3, 19, 21, 43, 68 and 86.

On strictly theoretical grounds, such symptoms as a tenseness of the membranes, a serous discharge, and an irregularity in the foetal circulation should be more frequently observed than these statistics would seem to indicate. In the absence of positive knowledge upon this point, the most natural explanation is one which a careful examination of the recorded cases will justify: that these premonitory signals of danger do exist to warn the practitioner, but that they usually escape observation, because his whole attention and energy are concentrated upon such exacting symptoms as the dreadful pain and deathlike collapse, to the exclusion of any search after other diagnostic marks.

Diagnosis: That this is extremely obscure and embarrassing we learn from the united testimony of all observers. In but few examples of this disease was its character determined at the outset. A concealed accidental hemorrhage, among many insidious diseases, stands alone in one respect, that its most prominent symptoms are common to other diseases and mislead, whilst those peculiar to it can be elicited only after a very careful examination.

The remarkable resemblance to a flatulent colic must not be overlooked. The absence of labor-pains, the tense and distended abdomen, the meteorism produced by the nervous prostration, the vomiting and sometimes purging, the "crampy" and "colicky pains," the "colicky gripings," which characterize so many descriptions of this disease, are very likely to mislead. Cases

1, 2, 3, 6, 10, 21, 23, 31, 32, 36, 44, 63, 64, 66, 67, 68, 71, 72, 84, 86, 92, and 93 illustrate this error of diagnosis. My own case presented phenomena so closely allied to those of a cramp colic that for hours it was impossible, with the light I then had, to discover a single symptom pointing to a hemorrhage. Indeed, as I look back upon the case, a doubt still arises whether the violent retchings were the *cause* or the *effect* of the effusion. To make out this important distinction we must be guided by the condition of the membranes, the seat of the pain, the state of the foetal circulation, the resonance or dulness of the abdomen on percussion, by the persistence of the pain and syncope, and especially by the fact that the woman is pregnant.

This accident is very likely to be confounded with rupture of the uterus, as in Cases 20, 47, and 62; but in the former the pains of labor are either absent or feeble until the membranes are ruptured, whilst in the latter they have been violent but are suddenly arrested. In the one the uterus keeps on increasing in size; in the other it diminishes, whilst the abdomen distends, provided the foetus escapes through the rent. In rupture the presenting part of the child recedes from the os, or the membranes grow flaccid; in a concealed hemorrhage the contrary holds true. Rupture rarely occurs until *after* the escape of the waters; a concealed hemorrhage usually takes place while the membranes are entire.

The persistence and severity of the collapse, in conjunction with the physical signs, ought to distinguish this disease from a fainting-fit; but we must depend entirely upon the physical signs to distinguish it from

injury to any internal organ, from the bursting of an internal aneurism, or from rupture in tubal gestation.

In every case of labor or disease of pregnancy, mark the state of respiration, for, where blood is lost, the watchful eye should correctly interpret the significance of repeated yawns and sighs long before the pulse flutters or the brain reels. Should collapse ensue; should the woman be a multipara near term; should normal labor-pains grow feebler and feebler, or be masked by one continuous pain far more importunate than those of labor; should the uterus increase in size or present a lateral boss; should the foetal circulation be absent or feeble; should the membranes grow tense and a serous discharge flow; should the history of the case reveal an accident or unusual fatigue, the physician is certainly dealing with a concealed accidental hemorrhage.

Finally, in obscure cases a diagnosis may sometimes be attained by pushing up the presenting portion of the child over to that side of the pelvis which is opposite to the placenta, and thus give egress to the extravasated blood. Nor should it be forgotten on the other hand that a grave amount of blood may be accumulating in the womb in any case of frank accidental hemorrhage.

Prognosis: This is most unfavorable; the mortality far exceeding that of placenta prævia. Blundell observes: "On this variety of flooding, however, I forbear to dwell; it is of rare occurrence, and in the present condition of our knowledge scarcely admits a remedy." (*Lancet*, No. 235, pp. 304, 305.) Out of the one hundred and six tabulated cases fifty-four mothers perished; and out of one hundred and seven children, six alone

are positively known to have been saved, viz., Cases 22, 40, 62, 65, 73 and 90. It must be admitted, however, that a few of the infants were at a non-viable age, nine of them being before the seventh month of gestation. Death terminated almost every case in which suffering from pain was either absent or not a prominent symptom; for the presence of pain indicates that the vital forces are not exhausted. In the twenty-two cases in which no suffering from pain is mentioned, so large a number as eighteen died.

Desmond remarks that all cases "proved fatal excepting those in which uterine action was present, and the contents of the uterus speedily evacuated either by art or by nature." (*Liverpool Medico-Chir. Jour.*, vol. 1, p. 86.) In corroboration of this statement I find that out of ninety-six cases in which this circumstance is noted, twelve had normal labor-pains, and only three died; fifty-six had very feeble pains, usually after the drainage of the waters, and eighteen perished; whilst out of twenty-eight women in whom these symptoms of labor were absent, the fatal cases numbered twenty-four.

There appears to be a trifling percentage in favor of those cases in which the concealed hemorrhage became partially external. Thus, out of twenty-nine in which this took place, twelve died; and out of seventy-three in which the hemorrhage was entirely concealed, thirty-eight died. But this slight advantage is, I think, wholly due to the fact that a correct diagnosis is made earlier, when blood flows externally, and prompt measures are therefore sooner adopted; for there is no doubt but

that the excessive mortality is in a great measure due to the obscurity of the symptoms, which causes the practitioner to remain inactive when he should be alert.

Treatment.—This may be comprised in a few words. Nature generally proves unequal to the occasion, and is powerless to stanch this “drain upon the treasury of life,” as Mauriceau so happily terms a uterine hemorrhage. Art may wait to “see what nature can effect, not what she can endure,” ready at any moment to lend a helping hand.

The importance of early interference is well shown from an analysis of the foregoing tables. Thus, out of forty-one women who died undelivered, in twenty-five of them the membranes were unruptured. Out of ninety-three cases, forty-three of them were left to the unaided efforts of nature, and of these thirty-two perished; whilst only fifteen deaths occurred in the fifty in which artificial aid was resorted to. The methods of interference were as follows: In twenty-four cases the membranes were punctured, with six deaths; in nine, the forceps were applied, with two deaths; in fourteen, version was resorted to, resulting fatally in five; whilst the three cases of embryulcia, viz., Nos. 1, 47, 89, were all unsuccessful.

So soon as an accurate diagnosis is made out, the rule should be imperative to deliver the woman as soon as possible, and thus lessen the bleeding surface; for as the hemorrhage is a concealed one, it is safer to act on the assumption that it will continue until the birth of the child or the death of the woman. By simply piercing the membranes the same benefit may not accrue as in

the franker forms of accidental hemorrhage. In the latter, by an early evacuation of the waters the hemorrhagic area is rapidly diminished. In concealed flooding this drainage will effect nothing, should the adherent margin of the placenta not yield; and indeed even if the placenta should become detached the blood may go on accumulating behind the membranes until it shall fill up the space originally occupied by the liquor amnii, thus rendering the condition of the woman still more perilous. To avoid this danger, after perforating the membranes a very tight binder and compresses should be applied over the abdomen to prevent any further distention, whilst other means are resorted to.

This method of treatment has been questioned by no less authorities than Baudelocque, Puzos, and others, who contend that the waters should not be drained off, or the womb emptied of its ovum, unless labor-pains be present or can be aroused, and the os be sufficiently dilated to admit the hand. The former eminent obstetrician supports this opinion by the following fallacious dictum: "The hemorrhage cannot become so great as to effect such changes in the volume of the womb, without causing the expulsive action to be keenly solicited, and this soon responds by pains first resembling and ultimately becoming true labor-pains." * This opinion was also entertained by Madame Boivin, as we have already shown.

But an analysis of the cases here collected proves the contrary, and lays down as axioms: (*a*) that the greater the hemorrhage, the greater will be the syncope; (*b*)

* *L'Art des Accouchements*, paragraph 1086.

that the pains of labor will become feeble in direct proportion to the severity of the collapse; (c) that consequently they are generally absent in the worst cases of hemorrhage, and cannot be aroused by the most powerful stimulants and oxytocics, so long as the uterus is over-distended; (d) but that when the membranes are pierced the vital contractility of the uterine walls condenses them, and usually provokes their organic contractility, unless the system be too far depressed.

It is well to recollect that in some cases there are feeble but intermittent condensations of the uterine fibres, which have undoubtedly been mistaken by observers for labor-pains. But these closely resemble those false labor-pains which only affect the fundus, and do not dilate the os uteri; they are merely instinctive efforts on the part of nature to resent the presence of intruding clots. In the majority of cases of internal flooding, the os dilates passively; but this is due not to the natural consequences of labor, but simply to the flaccidity of the cervix and surrounding tissues, resulting from the state of collapse, and also to the *vis a tergo* of an excessive uterine distention. Hence it follows that the dilatation of the os, in the absence of labor-pains, is in itself a speaking evidence of a serious hemorrhage. Under such circumstances it therefore behooves us not to rely upon nature to accomplish this dilatation, but to rupture the membranes early, apply the binder, and, if necessary, introduce Barnes' dilators, which are in fact more efficient than the bag of waters for rapid expansion of the os, and will obviate any necessity for incising the margin of a rigid os, as happened in Case 21.

If the os be dilatable, immediate delivery should next be attempted, either by the long forceps or by version. Each measure will have its advocates; but here, in our opinion, version by the feet meets all the requirements, and is decidedly preferable to the forceps; especially as the child very universally perishes at an early stage of the accident, and therefore no considerations for its safety are to embarrass the efforts at a speedy delivery. If the practitioner have attended his patient in previous labors, and know that her pelvis is ample, he is warranted in applying the forceps, provided there will be no delay in dragging the head through an imperfectly dilated os, and no subsequent detention at the perinæum. Under the most favorable circumstances a delivery by the forceps is always accompanied by more or less delay. Should the head become locked at the brim, as in my own case, or in the pelvic cavity, the physician would indeed have every reason to regret that the uterine cavity had not been previously emptied as much as possible, both by the delivery of the child's body, and by the extrusion of all the clots which the operation of version would necessarily involve.

In all other dangerous complications of labor requiring immediate delivery, version deservedly holds the first rank, because, by the bi-manual method, it can be resorted to at a much earlier period than the forceps. I have here, however, designedly placed these two operations on the same level as regards time, for when the hand can pass the os uteri, the forceps can often be applied; and in my opinion, to perform version in a case of concealed flooding, the whole hand will require to be

introduced, from the fact that the bulging in of the placenta or membranes, by the extravasation behind them, would present a ledge over which the breech or body of the child could not be made to glide by the feeble purchase of the bi-manual method of version.

As ergotism cannot be induced in cases of grave hemorrhage, ergot should be freely given, in order to counteract the tendency to relaxation of the uterine fibres, and to provoke true labor-pains after the rupture of the membranes. If, however, version be demanded, it may be prudent to withhold this drug until that operation has been performed. Of course, active stimulants, opium in full doses, beef-tea, etc., must not be spared. Warmth to the cold extremities is very grateful, and by derivation is often useful in arresting hemorrhage; perhaps, according to Chapman's theory, it would prove still more efficacious if applied also to the spine.

Finally, whenever the symptoms are obscure, and the diagnosis doubtful, act as though the case were one of concealed hemorrhage, and follow the precept laid down by Theodore Mayerne for the management of floodings, "*præstantissimum remedium est fœtus extractio.*"

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

REPORTED BY GEORGE PEPPER, M.D., SEC'Y.

[The Philadelphia Obstetrical Society having voted preference to this Journal for the publication of its transactions, we have commenced and will continue to present to our readers all Essays read before the Society, as well as the proceedings of its special meetings.—*Eds.*]

STATED MEETING, DECEMBER 3D, 1868. DR. JOHN H. PACKARD IN THE CHAIR.

DR. ROBT. P. HARRIS read an interesting memoir on "Hereditary Convulsions of Infancy and Childhood."

A discussion ensued on the character of the convulsive seizures and the treatment pursued.

DR. HARRIS remarked that in his cases the return, even in the slightest degree, of voluntary movement and sensation were most favorable symptoms.

DR. G. PEPPER alluded to the fact that although the convulsions had been so violent in their character and so very readily induced, and that the tendency to convulsive phenomena had extended into adult life, yet in none of Dr. Harris' female cases did puerperal eclampsia occur.

DR. HORACE WILLIAMS related the history of a case of an infant five days old, which was apparently previously perfectly healthy, but died in violent convulsions immediately after taking the breast for the first time.

Somewhat similar cases were referred to by other members.

DR. PACKARD gave the details of a successful urethro-plastic operation; three and a half weeks after the operation the patient was able to retain her water for two hours at a time.

MEETING OF JANUARY 7TH, 1869. DR. R. P. HARRIS IN THE CHAIR.

DR. A. H. FISH, newly elected member, was introduced.

DR. WM. GOODELL presented a specimen of vesicular disease of the chorion, related the history of the case, and made some remarks upon the nature of the affection.

DR. A. H. SMITH mentioned several such cases which had occurred in his practice, and alluded to the view recently propounded of the possibility of this morbid change affecting unimpregnated uterus.

Several other members briefly related similar cases, and gave the results of microscopical examinations; all tending to prove that, in their experience at least, impregnation and disease of chorionic villi had occurred.

DR. G. PEPPER related the history of a case of tertian intermittent fever in a new-born child; no suspicion could be entertained against the healthiness of the locality in which the child had been born and lived. The only explanation being that, as the mother had lived in a malarial region and suffered severely from the disease while in the early months of pregnancy, she had transmitted the disease to her offspring. The child did well under the use of quinia.

DRS. GOODELL and HARRIS related cases where the foetus in utero seemed to have been affected by the malarial poison, the mothers stating that they were aware of periodical convulsive movements of the children, their own systems being apparently unaffected. In connection with the above, Drs. Harris, A. H. Smith, and Goodell spoke of the tolerance to the action of opium that may be induced in the new-born infant from the mother having used the drug largely while pregnant.

DR. R. P. HARRIS gave the details of a case where f. 3 ss. of laudanum was given to an infant within twenty-four hours of birth without producing any inordinate effect, while in the same child, one drop, when three months old, induced profound sleep.

DR. A. H. SMITH was strongly in favor of the use of opium as our most efficacious means of arresting abortion and premature labor, and referred to numerous facts to prove that it produced no injurious effect upon the product of conception.

MEETING OF FEBRUARY 4, 1869. PRESIDENT DR. F. G. SMITH, JR., IN THE CHAIR.

DR. DE FORREST WILLARD, newly elected member, was introduced.

DR. GEO. PEPPER related the history of a case where, after the removal of a number of vascular growths from the female urethra and the thorough cauterization of the base by NO_3 , no unpleasant symptoms showed themselves; and when, a week after the operation, the inflamed base was gently touched with argent. nit., the most violent pain and sympathetic disturbances suddenly developed themselves. The patient was a strong, self-reliant woman forty-five years of age, had ceased to menstruate three years previously, and had never suffered from any hysterical phenomena. After the application of argent. nit., however, her entire nature seemed changed; she became hysterical to the last degree, and, notwithstanding the entire removal of the local condition and the administration of bromide of potassium and other sedatives, she has not materially improved.

DR. JOHN H. PACKARD related the history of a case of vaginitis, in which the woman became pregnant, although penetration had never been accomplished. No examination could be made,

on account of the violent spasmodic action of the muscles of vagina and vulva. Her condition was partially relieved by palliatives, but she aborted at the sixth month.

DR. F. G. SMITH, JR., asked the experience of the Society in the use of ammon. muriat. and tinct. aconit. in ovarian neuralgia, and stated that it was reported to be very efficient in such cases.

DR. A. H. SMITH had never used it in such cases, but spoke very highly in favor of ammon. muriat. in xv.-grain doses, repeated every two hours, in hemicrania.

DR. J. G. ALLEN related the history of a case where he had successfully employed transfusion. The patient was extremely reduced by repeated attacks of intermittent fever, and failed to rally under treatment. She became pregnant, miscarried, and flooded so profusely that her life was despaired of. The hemorrhage was, however, ultimately checked, and she slowly convalesced; but on resuming her ordinary avocations, the hemorrhage returned, and, although again checked, soon recurred. Dr. Allen transfused about f. ʒ iv. of defibrinated blood, taken from her husband, with immediate good effects, and ultimately she entirely recovered. The instrument used was a glass syringe, the nozzle being made on the plan of the ordinary hypodermic syringes, introduced into a superficial vein, and the blood directly injected.

DR. J. G. ALLEN related the history of a patient who had aborted a number of times at a fixed period of gestation, the accident being apparently caused by the death of the embryos. She was apparently a perfectly healthy woman, but her husband had suffered from syphilitic disease. Dr. Allen endeavored to prevent a recurrence of the accident by the administration of iodide of potass., &c. She again became pregnant, and passed the usual period of abortion in good health, the movement of the child continued, and she then for the first time showed evidences of syphilitic infection—ulcers on limbs, cutaneous eruption, &c.—but went on to full term, and gave birth to a healthy child.

DR. JOHN H. PACKARD gave a short account of a case of pseudo-membranous croup, in which he had performed tracheotomy. The child improved immediately, but died thirty hours after the operation, from pulmonary embarrassment.

MEETING OF MARCH 4TH, 1869. DR. ELLWOOD WILSON IN THE CHAIR.

DR. WM. PEPPER, newly elected member, was introduced to the Society.

DR. WM. GOODELL read a paper on "Concealed Hemorrhage."

DR. E. WILSON made some remarks on the subject, and gave short sketches of similar cases occurring in his own practice. He took exception to certain points made by Dr. Goodell, as to the period for the administration of ergot, which he considered should be given immediately on the detection of the nature of the case.

DR. GOODELL said that he had thought that the spasmodic contractions induced by the ergot, after the rupture of the membranes, might interfere with any necessary operative procedures.

DR. E. WILSON alluded to the enormous doses of ergot frequently administered in hemorrhages without uterine contractions being stimulated, and thought that if the spasmodic action could be induced, it was really the most favorable circumstance, as the action of ergot could not be established before the necessary operation, whatever it might be, had been performed.

DR. A. H. SMITH spoke of the inefficacy of ergot in cases of profuse post-partum hemorrhage, believing that it rarely acted by stimulating uterine contractions, but only produced nausea and vomiting. He also stated his preference for the use of the forceps, and believed that whenever the hand could be introduced into the uterus, even with the fingers forming a cone, the forceps could be readily and rapidly applied with perfect safety, and more force used in the delivery.

DR. E. H. WILSON did not agree with Dr. A. H. Smith, but believed that podalic version could be as rapidly performed, or even more so, as the os could be dilated passively by the hand and the feet grasped. He also laid down the same rule for placenta prævia, the fingers or hand being forced into the circle of the os until it was sufficiently dilated to allow turning. In cases like Dr. Goodell's, by this procedure the contents of the uterus were greatly diminished; the amniotic fluid being drained off and the body of the child brought into the vagina, the uterus was enabled to contract, and so close the bleeding vessels.

DR. A. H. SMITH showed to the Society one of Cutter's pessaries, and spoke favorably of their use in certain cases where the vagina would not bear the pressure of either the ring or lever pessary. He modified the instrument by curving the upper extremity slightly forward and widening the fenestra.

MEETING OF APRIL 1ST, 1869. DR. ROBERT C. HARRIS IN THE CHAIR.

The subject of "Concealed Hemorrhage" was again called up. DR. E. WALLACE related several interesting cases of the acci-

dent which terminated favorably. The treatment had consisted in rupturing the membranes, and application of the forceps. Dr. Wallace believed that the margins of the placenta normally adhered more firmly than its centre, consequently any disturbing cause would be more likely to separate the central portion, and thus allow hemorrhage behind the placenta.

DR. JOHN H. PACKARD related the history of a case of prolapse of the funis. The patient, in a former labor, Sept., 1867, had had prolapse of the funis, and had given birth to a still-born child, notwithstanding every effort at reposition. About ten days ago she again fell in labor, and, on reaching her, Dr. Packard found three long loops of the cord in the vagina; the child presented by the vertex, the waters had broken, and the uterus was acting violently. All efforts at reduction failed, although the postural method was fairly tried; and as the pulsation was becoming feeble, Hodges' forceps were applied within the uterus, and steady traction made. The head descended readily, and the child was delivered with the heart still pulsating; and after artificial respiration and other means had been employed for forty-five minutes, it was fully restored. Mother and child did well. The cord was three feet long, and encircled the neck and arms.

DR. WALLACE related the history of a very similar case.

REVIEW OF LITERATURE PERTAINING TO

I.

DISEASES OF WOMEN.

I.

R. CHROBACK. On Retroflexio-Uteri and Respiratory Neurosis. (*Wiener Med. Presse*, No. 1, 1869.)

K. W—, 22 years of age, suffered from shortness of breath since her 7th year, which was increased after having had pertussis in her 10th year. Catamenia appeared in her 14th year, remaining normal till she was 20 years old. In her 18th year she was affected, during an attack of dyspnœa, with a loss of consciousness and spasms of the upper extremities, which lasted at first for hours, and then for days, leaving behind a slight anæsthesia of the left half of the body. She remained in this state for one year, when the spasms ceased entirely, the attacks of dyspnœa also becoming rarer. In her 19th year patient was taken sick with pneumonia; after the recovery from which, the

attacks of dyspnœa became more frequent again, occurring usually once a month, without, however, coinciding with the menstrual period. In 1866 she was treated for five months in the clinic of Prof. Skoda, without receiving any relief. After her return home she fell against the edge of a table, remaining speechless for a few minutes, after which she was again attacked by violent dyspnœa and epileptiform spasms. Since that time menstruation became irregular. The patient supported the abdomen with a bandage, as she had the sensation as if there was a ball in the hypogastric region. There was also pain during defæcation—less so when emptying the bladder. The spinous processes of the 2d, 3d, and 4th lumbar vertebæ were also painful upon being touched. She even asserted that a strong pressure had caused attacks of dyspnœa. In January, 1868, the patient was received into the clinic of Prof. *Oppolzer*.

The girl is short, slender, and chlorotic. There is a slight scoliosis of the spinal column to the right side. The neck is thin; chest emphysematous; abdomen slightly tympanitic. Percussion shows a moderate emphysema on either side; the lung extends in the right mammary line to the 8th, in the left to the 5th rib. On the right upper portion there is harsh vesicular breathing; sybili and mucous râles; everywhere else a weak vesicular inspiration. On examining per vaginam the introitus is found to be so narrow that the finger can hardly enter; a remnant of the hymen, about 2"', is preserved; the columns of the narrow virgin vagina are strongly developed; the os sacrum very much excavated. The vaginal portion is slender, flabby, and soft, and crowded towards the left side of the pubic arch; the external orifice is a small, oval groove. In the posterior vaginal cul-de-sac the body of the uterus is felt below the level of the os; its walls are also thin and flabby, so that the sound can be felt through the posterior wall. The sound having been introduced with great difficulty, the length of the uterine cavity is found to be 2½ inches. The uterus is perfectly movable, free from pain, and otherwise normal. The menses appear at irregular intervals of 3—6 weeks, accompanied by moderate back-ache, and lasting usually 3—4 days. Pulse is 64 and soft; frequency of respiration, 10—40 in one minute. A repeated laryngoscopical examination shows nothing abnormal except a slight congestion of the vocal cords.

The patient, who does not appear to be at all hysterical, complains of heaviness in the chest and pain in the sacral region, especially during defæcation.

The day after her arrival she became unconscious, her eyes were closed, the left arm and both lower extremities were spas-

modically extended, the pupils large, and the bulbs turned inwards and upwards. At this time expiration became very difficult. After five minutes consciousness returned, but the extremities remained extended for several hours. Expiration continued difficult for three days.

The patient continued at the clinic for six months, during which time she suffered from three additional epileptiform attacks similar to the above described. The respiratory spasms recurred frequently at different times, rendering at one time inspiration, at another expiration, very difficult. In addition, the patient suffered three times from perfect apnoea.

During the first six weeks various remedies (ferrum; nitr. silv., iod. of potass., morph., etc.) were employed, without giving her any relief. Only inhalations of chloroform and hypodermic injections of morphine were of avail, the former diminishing the respiratory spasms, the latter the pain which was felt most severely at the lower sternal margin and over the os sacrum.

As the internal administration of medicines failed to alleviate the symptoms, local treatment was resorted to. For this purpose Sims' elevator was introduced with great difficulty, as the entrance was so narrow that it was hardly possible to pass the socket-joint of the instrument by the finger. The uterus was strongly anteverted several times during a severe paroxysm, when immediately the respiratory spasms and the dyspnoea ceased, leaving the patient perfectly comfortable. The morbid symptoms returned, however, as soon as the uterus became again retroverted, after the withdrawal of the instrument.

The repeated introduction of the instrument at different times in the beginning or in the midst of a paroxysm, was followed by the same result, the patient remaining free from any spasmodic attack while the elevator was in the uterine cavity.

The indication, therefore, was plainly to produce a permanent reduction of the retroflexion. Pledgets of lint soaked in glycerine were placed behind the vaginal portion, but they did not produce a complete reduction, and were not very well borne by the patient. The same happened after the use of various other extra-uterine pessaries. Finally, *Graily Hewitt's* intra-uterine pessary, modified according to the requirements of the case, was introduced into the cavity two days after the menses had ceased. The patient wore this pessary for three weeks, feeling very comfortable, although it caused her some pain, when she began to suffer from symptoms of parenchymatous metritis and parametritis, followed by a purulent exudation and perforation of the vesico-vaginal wall.

After twenty days the patient had sufficiently recovered to

allow an examination to be made. The uterus was perfectly movable; no trace of an exudation in the pelvic cavity. The retroflexion was sufficiently reduced to allow the introduction of a straight sound. The posterior wall of the uterus had become thick and firm, so that the sound could no longer be felt through it. The respiratory spasms having in the mean time returned, ceased again whenever the sound was introduced and the uterus elevated.

As it now seemed probable that an extra-uterine pessary would suffice hereafter, *Graily Hewitt's* extra-uterine pessary was introduced, which was borne very well by the patient, and answered the purpose perfectly.

The patient left the clinic at the end of June, 1868. Dr. C. was afterwards informed that the patient continued to be well until, for some unknown cause, she removed the pessary, when the same epileptiform attacks and respiratory spasms returned again with nearly the same intensity.

II.

SCHROEDER. Chronic Inversion of the Uterus reduced after repeated unsuccessful attempts, by means of a Caoutchouc Tampon. (*Berlin. klin. Wochenschrift*, No. 46, 1868.)

A woman, twenty years old, having been maltreated by a midwife after her first confinement, in February, 1866, suffered a complete inversio uteri, which was not immediately recognized, as it was believed to be polypus, for the removal of which she was sent to Bonn. The first examination revealed the inversion; on placing the hand upon the abdomen no uterus could be felt, only the funnel of the inversion, which was found to be nearly complete, but a small portion of the cervix remaining in the normal position. Viewed through the speculum the endometrium was seen, the mouths of the tubes also appearing as fine points with slightly raised edges.

On the day following the examination seven unsuccessful attempts were made by Drs. *Schroeder* and *Veit* to replace the uterus, both with the hands and with various instruments, considerable force having been used. Between times a caoutchouc tampon was kept in the vagina, which was filled so strongly that the patient could hardly bear it. After the seventh attempt had been made without any result, the tampon was allowed to remain continually in the vagina, always expanded to the utmost by water. After fourteen days the uterus was found to be in its usual place, the patient feeling perfectly well. When she was discharged the os

was still soft, and the cervical canal large enough to admit the finger up to the fundus.

This case again proves that pressure continuously employed deserves the most confidence in the treatment of *inversio uteri*.

III.

LEGROS. Secondary Suture of the Perinæum, by means of Pins introduced laterally. (*Monatsschrift f. Geburtsk.*, xxxiii. H. 5.)

Dr. L. found, on the thirteenth day after the confinement, that the ruptured perinæum had not yet been united, but was covered with strong granulations. Instead of waiting for cicatrization to take place, and then producing a union of the torn parts by paring the edges, he preferred bringing about immediate union by means of a new suture which would not touch the granulating surfaces at all. He passed a long pin through a fold of the skin on either side of the rupture, both ends of which were placed exteriorly. Around the protruding ends of these pins a thread was wound, either in the form of a square, when it remained always externally to the pins and running across the wound only above and below, or in the shape of a cross, the threads crossing each other across the wound. The threads thus drew the needles closely to each other, the margins of the wound were united intimately, and the dressing was left for some time without fearing that an ulcerative inflammation would tear the edges, or that the thread might, by acting as a foreign body, impair the process of healing. The operation is easy, short, and causes but little pain.

In Dr. L.'s case the result was very favorable. On the eleventh day after the operation the pins could be removed; no inflammation had ensued, while complete union had taken place.

II.

PREGNANCY, LABOR, AND THE PUERPERAL STATE.

I.

B. MEYER, of Freiburg. On the Development of Connective Tissue in the Placenta. (*Virchow's Archiv.* B. 4, H. 45 to 5, 1869.)

Among the diseases of the placenta, the development of connective tissue and the hyperplastic proliferation of this tissue with consecutive induration occupies a prominent place. The

author mentions briefly the well-known deposits of intercellular gelatine and fibrine, which were first described by Simpson as products of inflammation.

The formation of connective tissue in the placenta in the same manner as in other organs, its development and consecutive shrinking, is either limited to certain portions, or it extends over the whole organ. The more the newly formed connective tissue grows, the more the parenchyma proper of the placenta dwindles away by pressure and wasting of the vessels; and the final diminution of the organ results as much from the loss of normal as from the continued contraction of the newly formed tissue. But other changes peculiar to the placenta also take place. The fundamental tissue of the placenta consists of cells derived from the former decidua, its deeper or outer layer containing large and elongated cells which pass finally into true spindle-shaped, muscular cells; while in the superficial or inner layer the cells are more spherical and of an epithelial character. Imbedded in this tissue we find the vessels of the central part of the placenta developed in the shape of the well-known cavernous sinuses, into which the villous prolongations of the chorion are protruding. A considerable portion of the original placental tissue becomes atrophied by pressure, and disappears in consequence of the growth of the vessels. Into this sinuous network, filled with blood, the foetal vessels penetrate in the shape of villi by breaking through its walls. Thus in the parenchyma proper, there is only a very small amount of connective tissue.

The author cannot agree with *Simpson*, *Rokitansky*, and *Scanzoni*, who suppose inflammation, followed by exudation, to be the cause of the formation of connective tissue. First, there is no capillary system in the placenta except in the villi; and the author never found an exudation either in or around the villi, or in the other portions of the placental tissue. Undoubtedly a growth of either the homogeneous or slightly striated or granular intercellular tissue takes place under the form of considerable swelling, sponginess, and great moisture, which is followed by an increase in amount and size. The cell grows longer and broader; its large nucleus is seen more distinctly; other cells have two or more plain but smaller nuclei. Finally, such a cell loses its usual shape, a larger amount of elongated oval gaps are found in the tissue, which also contains, in addition to a large number of molecular particles, fat granules, and a number of spherical exudations inclosing nuclei-shaped shining corpuscles. The connective tissue appears in zones, which gradually increase in breadth between the thick vascular framework to which the cavernous structure is closely attached, and between the

trabeculæ of the sanguiferous cavities containing the villi, crowding the vascular portion of such section more and more closely together. Thus the alterations in the villous tissue become continually prominent, the epithelium is slightly dimmed, the villus becomes narrowed, opaque, and is finally surrounded by an envelope of thick granular matter. The fibro-cellular stroma nearly disappears, and the capillaries are in a state of fatty transformation. But a portion of the fundamental tissue of the placenta is also destroyed, the effect of fatty degeneration. The process does not take place everywhere and in an equal manner; the affected portions varying from the size of a pea, cherry, or nut, even to that of an egg. They are located principally in the centre, or scattered in several directions; either exceedingly tough and homogeneous, or more fibrous and net-like, bordered here and there by a very sharp outline. By the coalescence of the diseased portions, the whole of the placenta is finally affected.

This process may also originate from the scrotina, and thence spread towards the foetal surface. In this case the scrotina is thickened, and so intimately united to the altered placental tissue that it can no longer be separated from it. The uterine surface is then usually smooth, only occasionally shaggy; filamentous, villous attachments of fibro-cellular prolongations are found, giving to the surface a felt-like appearance. The slow wasting of the villous tissues, by constriction and pressure, leads to slowly progressing disturbances of circulation and nutrition, followed by an inclination to a premature separation, and, as it were, by constriction of the placenta. The foetus necessarily atrophies in consequence. Hemorrhage occurs but rarely in such cases. Whether isolated callous indurations are connected with syphilis is doubtful, there being but little clearness as yet about the ætiology of all these forms. Hemorrhage would take place only as a secondary result. Bleeding very rarely occurs in the villous vessels, rather more frequently in the superficial portions of the placenta covered by the chorion.

The thread-like excrescences sometimes protrude like rootlets into the uterine walls, leading to firmer adhesions; but even without this the attachment is sometimes very firm, and must be separated artificially during delivery. It has been observed that these attachments are already of an old date.

Beside the cell-stroma, pathological connective tissue is also developed from the vessels, especially from their tunica externa adventitia. As the arteries form almost exclusively the point of origin, we have in this case a periarteritis adhesiva. The diseased portions either proceed radiating from a central point,

or they are more rounded in the shape of cysts. Within these there is always found a small hole or fissure, a vessel cut through in a transverse direction, the walls of which can sometimes be plainly perceived. The calibre of the vessel is narrowed, and even closed; the walls are thickened; the inner coat slightly folded up. The surrounding whitish-gray zone consists of connective tissue, the intercellular substance of which is varied, homogeneous, indistinct, and striated, and either plainly fibrous or wavy. In the layers adjoining the vessels, only a few small spindle-shaped cells are found, while the outer zones in the softer connective tissue contain large cells of different forms. The shorter spindle-shaped form is predominant; nuclei indistinct, mostly fatty. There are also remains of villous tissue, compressed, atrophied, fatty. We have therefore a hypertrophy with consecutive induration of the outer layers of the vascular coats. If these changes are not extensive, no important influence is exercised on the nutrition of the foetus or placenta; this, however, takes place as soon as the interstitial form exists. Disease of the arteries also occurs in the diffuse form; entire ramifications of larger trunks are affected by it, not in the shape of single knotty deposits, but as a general thickening along their entire course. These changes in the vessels cause a state of ischæmia, and even anæmia, in the villous tissues of the placenta; the villi are collapsed, and become small, pale, or darkened by the formation of granules (fat). The circulation of the foetus, especially of its heart, is also affected by this stasis, giving rise to dilatation of the heart, and a permanent communication of its chambers, congestion of the lungs, and consequent cyanosis of the foetus. These circumstances have not yet been regarded in treatises on foetal diseases.

The author finally mentions that he has not yet found those pathological conditions which *Neumann* supposes to be the cause of the thickening (sclerosis) of the placenta.

II.

GIUSEPPE TESTA. Researches on Gastro-Hysterotomy. (*British and Foreign Med.-Chirurg. Review*, No. LXXXV., Jan. 1869.)

In an elaborate work on the Cæsarean Section, Dr. Testa discusses the history, statistics, and other points, and especially investigates the following:—In some cases the wound in the uterus is found, after death, gaping; in others, closed. Testa set himself to discover upon what this difference depended. He minutely examined the muscular structure of the uterus. He found that when the incision is so made as to fall in the line of direction of the fibres, the lips of the wound will be maintained

in apposition, but that when the wound cuts across the layers of muscles, gaping must follow. The gaping will be the greater, the longer the fibres are which are divided, and will increase with the uterine contractions; and since the external muscular fasciculi are longer than the internal, it is clear that the retraction of the first will predominate and cause the divergence of the margins of the wound. Thus, he observes that when the incision fell upon the fundus, cutting the transverse and oblique fibres proceeding from the Fallopian tubes, the wound gaped, owing to the retraction of these fibres towards their points of origin. And when the incision was made transversely from one of the sides, so as to spare the longitudinal fibres of the tubes, the edges of the wound could be drawn together. In the lower third of the uterus, wounds made in the direction of the long axis would present the margins in contact, the longitudinal fibres being spared; but since the neck becomes distended and relaxed during the latter months of pregnancy, it follows that the borders of the wound are kept apart by the divided and stronger transverse fibres. The gaping would be greater if the incision was oblique, so as to divide all the orders of fibres. It is true that the anatomical structure of the middle third is the same as that of the lower third, but at this point the longitudinal fibres, not having suffered distention, and preserving their tonicity, are fit to maintain in contact the margins of the wounds made according to their direction.

The application of these researches follows: 1. Incisions in the uterus made in the axis of the body, in the upper third, remaining open, give rise to the escape of lochia into the abdominal cavity, setting up peritonitis; 2. This may be avoided by making the incision transverse and lateral, but this is to be avoided on account of the risk of dividing large vessels; 3. Oblique and longitudinal incisions in the lower third equally dispose to peritonitis; 4. Testa recommends to make the incision transversely, and on one side, a little above or below the insertion of a tube, so as to avoid an order of fibres (the longitudinal of a tube before they become oblique), and thus avoiding all obstacles to the approach and union of the lips of the wound. He relates that Dr. Cocchi, of Rome, having followed this advice, saved mother and child. Dr. Testa then examines the various methods of applying sutures to the incised uterus. He objects to most of those proposed, and suggests one of his own. It consists in inserting two long needles at the level of the upper angle of the incision, at a distance of four lines from it, from without inwards through the abdominal parietes; then in making each needle penetrate the thickness of the corresponding lip of the uterine wound throughout its whole length, and always at the same

distance from the margin; this done, the needles are brought from within outwards, at the level of the lower angle of the wound. Care must be taken not to pierce into the cavity of the womb. Then a thread is twisted round the upper ends of the needles, and another round the lower ends; the rigidity of the needles suffices to keep the edges both of the abdominal and uterine wounds in apposition. Then straps of adhesive plaster are applied. Thus parallelism is preserved between the wounds; the escape of matter into the peritonæum is avoided, and the protrusion of intestines is prevented.

III.

M. J. WEIS. Case of Incarceration of the Placenta. (*Memo-
rabil.* xiii., 4, 1868. *Schmidt's Jahrb.*, Nov. 1868.)

Mrs. J. S——, aged 21 years, was delivered of a dead child November 14, 18—, the placenta remaining in the uterus. Dr. W. found the cord torn, and the placenta so tightly enclosed by the upper portion of the fundus that he was unable to reach it with the finger. After making several unsuccessful attempts for one hour, he consulted another physician, who also tried in vain for one hour to remove the placenta. They therefore ordered an emulsion of almonds to be given internally, and introduced suppositories of opium and cacao-butter four times within 24 hours into the very narrow mouth of the uterus. Warm poultices were applied to the abdomen, followed by a large number of leeches. Under this treatment the firmly compressed placenta was expelled after 36 hours. The patient's state of health was at first favorable, until the 22d day, when she was taken sick with typhus fever, death ensuing on the 32d day.

III.

DISEASES OF CHILDREN.

I.

DR. FLEMING. A Calculus Removed through the Urethra from the Bladder of a Child. (*Dublin Quarterly Journal of Med. Science*, 1868.)

DR. FLEMING exhibited a calculus before the Dublin Pathological Society, which he had removed with a urethral forceps from the bladder of a boy under two years of age. The boy was suddenly attacked with retention of urine, having suffered from painful and frequent micturition for a few days previous. When he was brought to the hospital he was forcing and straining to pass water; the bladder was distended as an oblong tumor,

reaching from the pubes to the umbilicus. The penis was in a state of partial erection, and the child was dragging and pulling it most violently.

Dr. Fleming at once suspected, from the peculiar character of the symptoms, that there was a calculus impacted in the neck of the bladder or in the urethra; and having ascertained its position when relieving the retention of urine with a silver catheter, he quickly dilated the urethra, and in the interim provided himself with a special forceps for the purpose, and was fortunate enough to catch the calculus as presented to the Society, secured within the blades of the forceps. He remarked upon the importance of the diagnosis of such cases, and upon the paramount value of the early detection of a calculus of a size removable by so simple and efficient an operative expedient. He had removed in many instances calculi from different portions of the urethra of children, but in none did he remember a case where a calculus caught *within the bladder* was so satisfactorily or with so much facility removed. Though by no means favorable to the operation of lithotrity in children, he had yet provided himself with a plain-bladed lithotrite of Charrère, which he purposed using had he failed with the forceps in the case under observation.

The calculus removed was small, was somewhat larger than a duck-shot, was slightly roughened on its surface, and consisted wholly of lithic acid. It was obviously renal in its origin, and, from the accompanying characteristic symptoms, it tended to confirm the opinion inculcated by Dr. Fleming in his clinical records of injuries and diseases of the urinary organs—that many, very many, of the abdominal sufferings so common in infantile and in child-life, are attributable to the unobserved escape of calculous concretion from the kidneys. Dr. Fleming stated that he had found in the kidney in utero, and in not a few instances in that of the infant and of the child, small gritty particles, consisting of the oxalate of lime, or of lithic acid crystal, impacted in the tubercular structure. He directed special attention to the remarkable dilatibility of the urethra at this early period of life, as being of much practical moment.

REVIEWS AND NOTICES OF BOOKS.

LESSONS IN PHYSICAL DIAGNOSIS. By ALFRED L. LOOMIS, M.D., Professor of the Institutes and Practice of Medicine in the Medical Department of the University of New York; Physician to Bellevue and Charity Hospitals, &c. New York: Robert M. Dewitt. 1869. pp. 155.

DR. LOOMIS tells us in his Preface his "sole object has been to collect into a plain and comprehensive compend the results of the research of many inquirers." In this he has been eminently successful. His work will be carefully perused by student and practitioner alike, and to both will gratification and profit ensue. There is nothing in it that should not be said, and nothing we could suggest has been left out. The concise and systematic treatment of the different physical signs and their meaning is admirable.

In the first third of the book the author gives us the "Topography of the Walls of the Chest," "The Contents of the various Regions;" and the different modes of examining and the value of the signs thus obtained. Then the signs in the Diagnosis of Pulmonary Diseases are taken up, and most admirably are they treated. The chapters relating to Pneumonia, Pleurisy, and Phthisis Pulmonalis well deserve the closest study and attention. "The Heart and Thoracic Aorta" next demand our study: first, its topography; next its physiological action, methods of diagnosis; and then is given a synopsis of the physical signs of Pericarditis, Hypertrophy, &c., &c., with their differential diagnosis. Lastly, the Topography of the Abdomen is treated of, and the diseased condition of its different viscera. The whole arrangement is eminently rational and satisfactory, and in attesting our appreciation of this little volume, we do so with great pleasure. Dr. Loomis has given us a book which for clearness and conciseness has no equal. To the profession at large it will be invaluable. Its typography is excellent. M.

A CONSPECTUS OF THE MEDICAL SCIENCES, COMPRISING MANUALS OF ANATOMY, PHYSIOLOGY, CHEMISTRY, MATERIA MEDICA, PRACTICE OF MEDICINE, SURGERY AND OBSTETRICS. FOR THE USE OF STUDENTS. By HENRY HARTSHORNE, A.M., M.D., Professor of Hygiene in University of Pennsylvania. Philadelphia: Henry C. Lea. 1869. pp. 1002. 310 illustrations.

As Dr. Hartshorne states, "experience shows that the thorough perusal of extended text-books by students, during the months of their attendance upon medical lectures, is impracticable." For this reason, many physicians have endeavored to so condense the study of medicine that more ground may be gone over in shorter time than is possible by using large works. As a result, therefore, we have had for a number of years various compendiums and hand-books, some of which commend themselves highly, and others are almost worse

than none at all. The present compendium is certainly not of the latter class; indeed we think it is entitled to the preference above all others, as it has been prepared by its well-known author with praiseworthy accuracy. About the same size as "Neal and Smith's," it is up to date, the illustrations are of a higher order, and the matter in much more pleasing language. There are some points which might be more fully dwelt upon, but still, as it is solely for the use of students, this is perhaps not necessary. We think that this work is far better adapted to students than Dr. Hartshorne's "Essentials" are to practitioners. Space compels us to conclude by recommending it as a book which students will do well to possess themselves of.

D.

DU FRISSON DANS L'ÉTAT PUERPÉRAL. Par E. FRANÇOIS. Paris : H. Delahaye. 1868.

A MINUTE discussion of a symptom can only then be considered good and desirable, if it is appreciated in every regard, and if the author always bears in mind that he speaks of a symptom and not of a disease. The author follows this principle by placing at the head of the first chapter the motto derived from *Trousseau*: The chill is (according to its meaning) nothing but a spasmodic attack.

After a short preface on the puerperal state in general the author communicates the plan of the work. Analogous to the three periods of the puerperal state, in a wider sense he also assumes three parts: the chill during pregnancy (1st part); in the childbed proper (2d part); and finally during lactation (3d part).

The chill is a very common symptom during the puerperal state, either being of no importance, or the precursor of the most dangerous complications. The time of its occurrence is significant with regard to its prognostical value, it being generally followed by disturbances of mother and child whenever it takes place during the latter days of pregnancy (1st part, p. 20, *seq.*) Of the affections belonging to this category the author treats of hæmorrhagia uteri, death of the foetus, dysentery (with one case), icterus, rheumatismus uteri, and puerperal fever during pregnancy, mentioning in addition an observation of the last kind made by *Hippocrates* (*Epidem.*, lib. 1) which terminated successfully, and three cases of *Tornier* and *Béhier*.

During *delivery* (2d part, p. 50) at the time of expulsion of the foetus or placenta the chill almost represents a physiological symptom which need not cause any anxiety. The author distinguishes here the chill during labor, that during the period of expulsion, and that at the moment of delivery.

In the course of the puerperal state the chill is the more important, the later after birth it happens. But however frequently it may ensue after traumatic lesions and in hemorrhages, it may be absent even in serious affections (6th case, ruptura vaginæ, peritonitis, absence of chill, death: *Johnson and Sinclair*). If it occurs twenty-four hours after birth, it frequently indicates puerperal fever, the first symptom of which is often the chill.

After mentioning the various hypotheses and historical notices, as well as two cases of puerperal fever, the author details minutely the origin, essence, and the development of the puerperal fever from a preliminary stage to the initial chill (which, however, may be absent, as two cases show), and then treats of the disease itself, giving a history of six characteristic cases furnished, with an interesting tabular statement of temperature. After forty-eight hours the chill is of less import, indicating usually a slight puerperal affection, less rarely a milk-fever. Here the author again adds four cases, with the record of temperature.

The treatment of the chill during the puerperal fever and slight puerperal affections is rather uncertain. The main indication at the beginning of the rigor is the artificial warming of the patient by means of very hot clothes applied to the skin, dry frictions of the limbs without exposing them, the internal use of acet. ammon., after *Legroux*, as well as the employment of alcohol and aromatic alcohol, especially rum and liqueur de la Grande-Chartreuse (20–25 grmm. pro dosi). After the paroxysm tinct. op. is given, either alone or in connection with acet. ammon., or, according to *Depaul*, veratrum viride, and, according to *Beau* (1858), chin. sulph. two grmm. per day. The author does not attach any value to depletion or the use of mercury; he recommends the former only after localization has taken place. In the beginning of affections following confinement the chill has almost no significance as regards diagnosis or prognosis. It recurs frequently in the course of phlegmasias, indicating the formation of pus. The author here treats of metritis, metroperitonitis (2 cases), phlegmonous inflammation of the broad ligaments (1 case), phlegmasia alba dolens (2 cases, one of which is taken from *Virchow*), purulent and ichorous infection (2 cases). After the fifth or sixth day the cause of the chill is frequently found in a gastro-enteric (1 case) or ephemeral fever (1 case), or from puerperal eruptions, as puerperal miliaria or puerperal scarlatinoid. Of the latter the author saw only the one case described by him. Milk-fever is an exception in the course of the first nine days; beginning, if it exists, with a slight chill. If a woman is taken with chills forty hours after delivery, the abdomen, uterine horns, and broad ligaments are to be examined carefully. If a close palpation reveals

neither painful nor swollen places, the physician is justified in supposing a milk-fever and making a favorable prognosis. The author, speaking minutely on the existence of milk-fever in an historical point of view, comes to the conclusion that fever ensues in flux of milk towards the breast, but is not necessarily always present, being, on the contrary, rather an exceptional symptom in the puerperal state, occurring oftener in women who do not nurse their children themselves (1 case, with temperature of 37.8° R. in the axilla.)

Of other intercurrent disturbances of the childbed, the author mentions articular rheumatism, which he prefers to be considered as puerperal fever, if, as frequently happens, accompanied by purulent gatherings in the joints; also intermittent fever, affections of the organs of digestion, dysentery, diarrhoea, and simple indigestion, as well as retention of urine.

During lactation (3d part, p. 190) the chill is but of secondary value with regard to diagnosis; it can only assist in discovering such affections as are easily recognized by other symptoms (especially mammary abscess).

During the whole course of the puerperal process, intercurrent affections are accompanied by more frequent and violent chills than is otherwise the case. Generally, however, the intensity of a paroxysm is too vague a term to be satisfied with it. Here the thermometer alone indicates the degree of the affection; it announces the greater or lesser danger of the symptom (chill); and even if the time of the paroxysm is taken in consideration, if its intensity is measured with the thermometer, the chill alone can never lead to a diagnosis. In order to know what affection we have to deal with, and to judge of its unfavorable or favorable course, the accompanying symptoms and their mutual relations are to be ascertained carefully.

These are the facts for the semeiology in general. Strange to say, there is found in *Galen** an entirely different passus: "He who is unable to discern from the chill alone, after the first visit, whether there is an intermittent fever of tertian or quartan type, does not deserve the name of a physician." Such an exclusive and important assertion is incredible on the part of a man of mind. In medicine one must not draw conclusions from one single symptom, neither attempt to create vainglory by the art of guessing. A solitary symptom never suffices for the formation of a diagnosis—judgment is to be based by all means upon the ensemble of the symptoms. This principle renders this essay worthy of recommendation, it being also worth while reading in several other regards.

* *Krises*, *Libr. II. cap. 4.*

ESSENTIALS OF THE PRINCIPLES AND PRACTICE OF MEDICINE. A HAND-BOOK FOR STUDENTS AND PRACTITIONERS. By HENRY HARTSHORNE, M.D., Prof. of Hygiene in the University of Pennsylvania, &c. Second Edition, Revised and Improved. Philadelphia: Henry C. Lea. 1869. pp. 452.

IN all professions there are those who do not recognize the fact that "a little learning is a dangerous thing." Our own calling has many such disciples—men who try to gain knowledge by the smallest amount of reading with the least amount of trouble. To such, therefore, books in which the science of medicine is treated of in a condensed and necessarily brief manner are particularly acceptable. The above work, as its title implies, is one that is calculated to supply the wants of such who do not read the standard works on the practice of medicine, and from such it is certainly deserving of liberal patronage, as its contents have been carefully and judiciously compiled. For our own part, however, we look upon such books as simply useful to the college student, as a means of refreshing his memory after he has left the lecture-room, and who often has not the time for more extensive reading, or cannot possess himself of the special text-books. That practitioner must indeed have an easy conscience or great confidence in his own knowledge who would be satisfied to bring to the aid of a case of croup such knowledge of the treatment of that disease as he had gleaned from two small pages, or who would feel sufficiently able to diagnose and treat a case of cerebro-spinal meningitis after having read *all* about it in three pages. Indeed we cannot see but that much harm may be done by trying to make the study of medicine easier than those find it who use the standard text-books; however, this is not every one's opinion, and as "doctors differ," we will allow others to think differently. As Dr. Hartshorne has simply aimed to make this work a hand-book and not a text-book, we are pleased to say, that if used as a hand-book only, it will commend itself as the best we have yet seen. The style is clear, the most important points of practice well delineated, and its size such as to be conveniently carried.

D.

A PRACTICAL TREATISE ON THE DISEASES OF WOMEN. By T. GAILLARD THOMAS, M.D., Prof. of Obstetrics and the Diseases of Women and Children in the College of Physicians and Surgeons, etc., etc. With two hundred and twenty-five illustrations. Second edition, revised and improved. Philadelphia: Henry C. Lea. 1869. pp. 647. 8vo.

IN a previous number of the JOURNAL we gave a review of the first edition of Prof. Thomas' work, which had then just been given to the profession. Although we spoke very highly of the book as a work of great practical and scientific import, yet we did not think we should be called upon to notice a second edition within the short space of a year. But such is the fact, and it alone pronounces a more flattering verdict on the merits of author and book than any journalistic pen could write.

The present edition has undergone careful revision, and the author has rendered the work more complete by the addition of a chapter on chlorosis, and the incorporation of other matter into the original text.

To the younger members of the profession it is hardly necessary to say more than advise them to make a thorough study of so reliable and entertaining a book; to the older members we recommend it as containing the practical experience and advice of a hard student, successful practitioner, and able teacher.

D.

A TREATISE ON PHYSIOLOGY AND HYGIENE. For Schools, Families and Colleges. By J. C. DALTON, M.D., Professor of Physiology in the College of Physicians and Surgeons. With illustrations. New York: Harper & Brothers. London: Sampson Low, Son & Marston. 1868. pp. 399.

THERE is scarcely a medical man in this country who has not read Prof. Dalton's larger and first work on physiology, for aside from its being the text-book of almost all our medical colleges, it is a work of so much value that it is accorded a place in every good medical library. As therefore Prof. Dalton has proved himself to be an authority on physiology, it is not saying too much to consider him the best able to write a popular treatise on his favorite subject, a style of book that has long been wanted, and on a subject of which every individual should know the first principles. The work before us is attractive in style and appearance; the illustrations, which are of a high order, greatly adding to the interest of the text, and the addition of "questions" to each chapter makes it considerably easier for both scholar and teacher to master its contents. So highly do we think of this work that we sincerely hope it may be introduced into every family and school, replacing some of the incomplete and unreliable books heretofore in use.

D.

ZELL'S POPULAR ENCYCLOPEDIA, AND UNIVERSAL DICTIONARY OF HISTORY, BIOGRAPHY, GEOGRAPHY, SCIENCE, ART

AND LANGUAGE. Edited by L. COLANGE. Philadelphia : T. Ellwood Zell. New York : M. B. Bond, 7 Murray Street.

ALTHOUGH it is not within the province of a medical journal to notice outside works, yet in some cases the great merit of a book and its decided value to medical men makes it desirable that it should be brought to the notice of the profession. A thorough and exhaustive Encyclopedia, such as the above, is worth many times its cost price, and this one especially commends itself to physicians for the reason that it has the additional feature of being a good medical lexicon.

It is fully illustrated with plates of a high order, is elegantly printed, and being issued in monthly parts at the cost of fifty cents, is within the reach of every one who desires to make an addition to his library of a work which will give him information on many subjects which cannot be obtained from other sources.

BOOKS RECEIVED.

PRACTICAL MANUAL ON THE TREATMENT OF CLUB-FOOT. By Lewis A. Sayre, M.D., Professor of Orthopedic Surgery in Bellevue Hospital Medical College. New York : D. Appleton & Co. 1869.

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ORIGINAL COMMUNICATIONS.

REMARKS UPON SOME RECENTLY REPORTED CASES
OF MONSTROSITY.

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THE history of monsters (Teratology) is of considerable interest to the surgeon, because many congenital deformities are remediable by operation; to the anatomist, because it lets him into some of the secrets of embryology; to the medical jurist, because there is often involved a delicate question of viability of single or multiple individuality; and certainly, since the days of Regis (1690), every reported case has been a little treasure.

To Stephen and I. G. St. Hilaire is given the credit of having founded the science, at the end of the first quarter of the present century.

For above a hundred years the subject has been almost abandoned to those who, by opportunity, curiosity, or proclivity, have been inclined to give it some special study.

So modern works on general pathology, where the subject most naturally belongs, have given it but slight mention, or skipped quite over it.

The classical work of Cruveilhier (*Anatomie Pathologique*, 1830—1842) exhibits but a few isolated cases in this department. So the extensive works of Gluge, the later and splendid work of H. Lebert (*Traité d'Anatomie Pathologique générale et spéciale*, Paris, 1857), briefly names the principal teratological writers (tome 1, p. 15), and a short chapter (t. 1, p. 413, et seq.) gives a résumé of I. G. St. Hilaire's classification, and thus dismisses the subject.

Rokitansky, in his work on *Pathological Anatomy*, distributes under various heads a good deal of teratic description, as also does Cruveilhier in his *Traité d'Anatomie Pathologique*.

The few facts in Auvert's "*Selecta Praxis Medico Chirurgicæ*" (1848-51) are so general that they are of but small practical account.

Serres (*Recherches d'Anatomie Transcendante et Pathologique*, Paris, 1832) has extensively philosophized, and G. J. Fisher (op. cit. infra) has systematized in one department of this subject.

All admit the need of a larger museum before a generally acceptable classification can be made. Hence the interest and importance of the following cases:

Dr. George Badger (*Medical Record*, vol. 4, No. 7,

page 166) describes the following case: "Amelia H.—, aged 20 years, mulatto, a native of Jamaica, was taken in labor about nine A.M., Sunday, September 6th, 1868. I was called to see her at 1.30 A.M., September 7th, when I found that the membranes had ruptured about three hours and a half previously, and that a right arm was presenting from the vulva. Uterine contractions were forcible and frequent. I attempted unsuccessfully to reduce the arm and bring down the feet. Went for chloroform, and on returning found that the child had descended somewhat, and was doubled up in the vagina. With the assistance of the chloroform, I succeeded in bringing down the feet. When the head had been delivered, I found it still firmly attached to something, and supposed that the child had an enormous tumor of some kind on its head; but soon another pair of eyes and a mouth followed, and I discovered that I had got *two girls united by the tops of their heads*, well formed, equal in size, dead, but probably alive at the commencement of labor, judging from the condition of the presenting part. Period of gestation, between seven and eight months.

"The two faces looked in nearly the same direction. Ossification equally complete in both skulls, which were also of equal size; the frontal and parietal bones not continuous over the tops of the heads, but meeting each other without being united. There was no indication of any septum of bone between the crania, but both brains were apparently contained in one osseous case. There was a thick growth of hair all around the heads.

"The loose condition of the cranial bones and flexion of the necks allowed of the bodies being brought parallel to one another, and it would be a point of some interest to know what their relative position was *in utero*. There was one small placenta for the two, each child having its own umbilical cord.

"This woman had one child two years ago, a girl, well formed, still living.

"The mother had a complete, but rather tedious recovery."

The above case, even without the positiveness which a dissection might have given it, is a welcome addition to the short list of this genus of monstrosity. Being an example of "duplicity, with more or less separation of the cerebro-spinal axis from below upward, or from the caudal towards the cephalic extremity of the neural axis," it falls under Fisher's ORDER II.—*Terata anadidyma*, ἀνά, "up," and διδυμος, "a twin." (An Essay on Compound Human Monsters, etc. Geo. J. Fisher, A.M., M.D., Albany, 1866.) And inasmuch as it presents "two more or less complete individuals conjoined by some portion of their heads—the bodies are distinct and free—with all their members well developed," it belongs also to Fisher's *Genus I.*—CEPHALOPAGUS, κεφαλή, "head," and παγω, "I fasten."

In the typical cases of this genus the vital organs are quite distinct, and each individual has an umbilicus and cord of its own. As far as the description permits classification, Dr. B.'s case is a typical one, and adds another datum for Fisher's remark (p. 8), that "most of the intermediate or transitional forms (*i.e.*,

of double malformation) are extremely rare, whereas the cases in close relation to the principal types are [comparatively] quite numerous, and so nearly identical, in external configuration and internal structure, as to lead the common observer to include them in the same generic and specific groups to which they would be referred by the scientific teratologist."

Baer (*Ueber doppelte Missgeburten*, St. Petersburg, 1845) delineates the external configurations, and describes in careful detail the cranial dissection of a cephalopagic monstrosity, in which the two bodies were united at the forehead.

The preparation is described by Baer (p. 35, et seq.) as found in the museum of the Imperial Academy of Sciences of St. Petersburg, in whose "*Mémoires*" (*Sc. Naturelles*, t. iv.) may be found a considerable monograph on teratology.

The twins are both female, and, with the exception of the frontal conjunction, well formed. From the small size of the crania, the considerable volume of the nymphæ and conversely small labia majora, he judged their age to be about the eighth month of pregnancy.

When the two bodies lie side by side (taf. vi., fig. 1), their axes are not quite parallel, because their frontal connection is somewhat oblique.

The union is between the right frontal halves, and in such a manner that the mouth of one individual is directed towards the right ear of the other, and the two right eyes are scarcely half an inch apart.

Thus the right half of each face is partially hidden by the corresponding cheek.

On the left side the eyes look outward, and the right half of each face is full and free. Had the children lived, they would have contemplated the outer world each with her left eye, while with the right she must gaze a lifetime into the eye of her sister.

On the top, the furrow of separation between the two scalps is very shallow, and the hair continuous.

Although each head had its small right and full left side, the crania are so nearly alike that one can hardly distinguish between them.

The scalp being peeled off, the parts of the compound cranial are seen to be so joined that the middle line is doubly curved like an S. (Taf. vii., fig. 1, 11.)

The left half of each occipital bone is larger than the right, and the same disparity of area is observed between the left and right parietal, temporal, and frontal half, so that each left ear is further from the sagittal suture than is the corresponding right ear.

The two anterior fontanelles form one long, somewhat oblique, and quadrangular membranous space.

The frontal bones are so disposed that the frontal suture of each cranial is tolerably normal below, near the root of the nose; but the sutural margins so diverge upwards that the margin of each right frontal half is joined, not to its own left half, but to the left half of the opposite skull.

The condition of the brain is not clearly defined, but it seems that some sort of septum divided the general cranial cavity into two equal compartments; that the left hemispheres are normally developed, while the

right hemispheres are small, and each lacking an anterior lobe.

The connection, then, between the heads is established by a failure of the anterior portion of each right cerebral hemisphere.

Everard Home (*Philosophical Transactions*, 1790, p. 297) describes the case of a child born in May, 1783, in which the body of the child appeared normally developed, excepting the head, which appeared double from the presence of another head of the same size, and almost equally developed, attached to its upper part. The upper head was inverted, so there appeared to be a firm adhesion between the crowns, the circumference of union but slightly marked by any indentation, and the scalp of one head almost smoothly continuous with the scalp of the other. The faces, however, were not on the same vertical plane, the centre of the upper face being over the right eye of the lower.

At the age of six months the two skulls seemed to be completely ossified, excepting a small space, like a fontanelle, between the frontal halves of the upper head.

The temporal arteries of the superior head did not pulsate perceptibly, but the veins were quite distinct. The neck of the superior head was only about two inches long, and terminated by a rounded soft tumor.

At the time of birth the frightened nurse had pitched the monster into the fire, by which means one eye of the upper head had been injured, but the other was intact, and possessed normal motility. The lids, how-

ever, were slow in appreciating the approach of any body, nor was the iris by such means in the least affected, only contracting slowly and imperfectly when exposed to a bright light; nor did the actions of the upper eyes correspond with the functions of the lower, but were often open when the child slept, and shut when it was awake.

The ears were mere cuticular folds, without any appearance of meatus; the lower jaw small, but capable of motion; tongue small, flat, and firmly adherent to lower jaw, excepting a short distance from the tip. A considerable quantity of saliva was occasionally observed in the mouth.

The muscles of the face were motile, and the integument of the whole head possessed a good degree of sensibility, and the lips attempted to suck when the lower mouth was applied to the nipple.

The lower head presented nothing unusual below the cephalic juncture; its body, however, was emaciated.

At two years the relations of the two heads had changed but little, excepting that the upper eyes could not be entirely closed, and were affected with an almost constant lachrymation.

When anything attracted the child's attention, all the eyes moved at the same time, but only the lower towards the same direction, so that the upper eye did not appear to regard the object of the lower.

There seemed to be a decided sympathy between the two heads, as when the child cried the features of both heads were similarly affected; and in nursing satisfaction was expressed by the upper mouth while the lower

was in the act; and when the child smiled the features of the superior head smiled too. At this time the sensibility of the integument of the superior head seemed to be considerably diminished.

Soon after the child was bitten by a cobra, and perished therefrom.

The dissection showed the skulls to be quite similar, their ossification well advanced, and the union to have taken place at a zigzag periphery, where the frontal and parietal bones of each skull, instead of bending inwards, to form a cranial vault, are continuous each with its fellow of the opposite skull on a surface almost plane. Some slight distortion of lines of junction, allowing a margin from one skull to be received opposite a fronto-parietal or parieto-occipital suture of the other, permitted the obliquity, by means of which the middle point of one face was over the right eye of the other.

No bony septum was found in the cranial cavity; and as only the *posthumous* skulls were received by Home from India, the condition of the cranial contents can never be known.

In Peter Sann's case, dating 1757 (Schrift. d. Harlemer Gesellschaft. 1775, 8, b. 1, p. 282), the two bodies of female twins, born dead, were well formed, but the heads were joined. It is noted by Barkow (De Monstris Duplicibus verticibus inter se junctis, p. 6, Berlin, 1821) as somewhat similar to the case of Home, though no anatomical disquisition of the bones was made.

In Albrecht's case, cited by Barkow from Commenc.

litterar. noric., 1754, p. 321, the twins were joined by the head in such a way that the vertex of one adhered to the right side of the other's head, the two heads thus forming an angle.

Another case, from Klein (*Salzburger Medicin. Zeitung*, 1799), is given more in detail.

While in the sixth month of pregnancy, a woman, descending with a heavy load, felt a sudden giving way in the abdomen, and from that time was tormented with vehement pains in the vesical and sacral regions. This happened April 15, 1799.

On the 17th, about daybreak, the waters broke, a knee came down, and, after futile attempts to replace it, a foot was seized and delivery effected; but the delivery of the head was followed by another head adherent to it, and then by a whole second foetus.

Both lived. There were two umbilical cords inserted into one large placenta. The children, males, otherwise well formed, were united by the tops of their heads, so that the two bodies lay in a straight line, but the face of one looked towards the left side of the other. They lived 64 hours, one dying half an hour before the other.

The cranial bones of each skull, instead of bending inwards to form vertical arches, were continuous, after about the same fashion as in the cases of Home and Sann. There were distinct brains, apparently separated by their membranes; and their brief emotional life showed a pretty close sympathy to exist between the twins.

In another case described by Hemery (*Mémoires de*

Paris, 1703, Hist., p. 39), and quoted by Meckel, two infants, male, were born with a common occiput and vertex, with the faces looking in opposite directions.

But the stress of Barkow's little dissertation is laid upon the description of a monster in the museum of the University of Berlin. The twins, female, were born with their heads united at the occiput and vertex, in such a manner that they looked in opposite directions. (Tab. I.)

One was hare-lipped. The left side of the vertex of the hare-lipped child was joined to the right occipital region of the other child, in such a manner that the left cheek of the hare-lipped child looked slightly towards the right cheek of the other child.

As the hare-lipped child was a little the smaller, it is nominated the minor, for sake of description, while the other may be called major.

Of the major head the frontal bones were normal, the parietals form a normal sagittal suture, and the right parietal receives at its posterior margin both the left parietal and left frontal of the minor head; by its inferior margin it receives its own temporal. The anterior fontanelle of the major head is small; but where the four parietals meet between the heads is a large membranous space, receiving at its left major border the occipital of the major cranium.

The major occipital, normal as regards its condyloid and basilar parts, curved upward and backward to meet the minor occiput and assist in forming a sulcus between the two heads.

It is not necessary to extend this text further into

the mention of corresponding details of the minor cranium.

There was one general cranial cavity, but the two brains seem to have been kept asunder by a meningeal septum.

After criticizing a case of "two female children joyned together at the crowne of their head," of which "sometimes one sleeps whilst the other wakes, cries, or bats, &c.; at other times they both sleep together;" the copper-plate figure and inscription of which his colleague Hamel brought to him from R. Owen, and speaking doubtfully of the identity which I. G. St. Hilaire pretends to find between this case from the College of Surgeons and Münster's case, Baer (op. cit., p. 54) quotes from Anel (*Mémoires de Trévoux*, A., 1716, Janv., p. 168) a reminiscence to the following effect:

"I remember seeing in Germany two male children, about ten years old, joined together by the posterior parts of their heads, and monstrous only in this respect. I believe there was an osseous septum. The children were large and fat, enjoyed perfect health, and had never been sick. Their physiognomies were different, but not less so than their manners; for while one was very serious and taciturn, the other was lively and gay; and although they were twin brothers, and inseparably attached to each other, they were not always good friends. It seems that these children had nothing in common but their birth and the osseous partition which, without doubt, separated one head from the other. They had such an aversion for each other that if left to themselves they might have de-

stroyed each other, for they often came to blows, and there was plenty to do to keep them in good humor. One of them appeared to be a fine fellow, polished and easy in his manners, and of good spirit, but he seemed to be embarrassed by having such a brute continually over his shoulder.

"The father and mother, looking only to the pecuniary profit, kept the children in a miserable show-room in a public square. These two children were assuredly engendered by the same father and mother at the same time; yet they resemble neither each other nor even their parents—such a remarkable thing in twins that it has given occasion for many learned men to philosophize upon it."

Less circumstantial, and perhaps not more apocryphal, is the figure and description given by L. J. Moreau de la Sarthe of a somewhat similar case of *cephalopagus occipitalis* (*Description des principales Monstruosités dans l'homme, etc.*, Paris, 1808, page 15, planche xl.). He says, "The two children which form this monster are well formed; the monstrosity consists in the conjunction of the bones of the two crania. It appears that these two children were born dead."

The union appears in the finely colored plate to be by means of a long and thick isthmus between the occiputs, encroaching rather on the right parietal region of one child, so that as they stand together the shorter child rests his right shoulder between the scapulæ of his brother, and they look at right-angles to each other.

The text is subscribed: "Tiré du Cabinet du Jardin des Plantes."

In the "Half-yearly Compendium of Medical Science" for Jan., 1869, p. 125, is figured a case of monstrosity which was contributed to the Sept. number of the "Pacific Medical and Surgical Journal," by Dr. T. D. Johnson, of San José, California.

The delivery is said to have presented nothing worthy of note, except some difficulty at first in detecting the presentation. He says: "When I brought down one foot it was followed by a second, and instantly afterwards by a third and fourth. Thinking that it was a case of twins, I supported two of the feet, using gentle traction with the other two, that the bodies might ascend and descend. This I did during two pains, but they appeared immovably fixed." He forthwith suspected an attachment between the children—a remarkably shrewd guess.

The children were born dead; both appeared fully matured.

The communication is stated to have been accompanied by photographs, and the birth to have occurred March 4, 1868.

From an inspection of the figure, it would appear that the monster belongs to Fisher's ORDER II., being a species of *Genus* II.—*Syncephalus*. It is probable from the text that the union of the bodies did not extend much below the umbilicus; and a rough idea of the general appearance of the monstrosity may be formed by supposing two fetuses split open on their anterior median line, as far down as the umbilicus, and applied the one to the other: that the right abdominal half of the one is confused with the left abdominal

half of the other, the right thoracic half of the one with the left thoracic half of the other and the right cephalic half of the one with the left cephalic half of the other; so would be formed three common cavities—abdominal, thoracic, and cephalic—but the two more or less perfect faces would look in opposite directions, and sidewise towards the approximated shoulders.

Under this genus a few references may be given.

A case of human monstrosity, with a commentary. W. Clark, M.D. Read before the Cambridge Philosophical Society, May 16, 1831.

“The monstrous production consists of the junction of two males by the head, neck, sternum, and abdomen of each, as low down as the passage for the common umbilical cord. From this point the bodies are separate, well nourished, and very perfectly moulded. The connection is of this kind: The spine of one foetus is to the extreme right, of the other to the extreme left. The ribs from each spine arch towards a mid-plane, and thus form a body with breasts on each front common to the two. The right portion of the face of one foetus joins with the left portion of the face of the other, to make up two anomalous countenances.

“One of these faces is more perfect than the other.

“There are two ears to each and a mouth. Over the mouth is, in each, an eye-ball, surrounded by four eyelids. In the more perfect face, the eye-ball presents two corneæ of different sizes: in the less perfect, one large transparent disk.

“The bones of the spinal column, of the pelvis, and limbs of each foetus, and the ribs, being normal, the

bones of the head, standing upon each vertebral column, unite to form a single cavity for the common brains of the two foetuses.

“On the top of either column is placed an occipital bone, to which the temporals and parietals are attached in the usual way. The parietal bones corresponding to one column meet those corresponding to the other column at their anterior and superior angles, which are truncated; membrane alone uniting the truncated angles, and thus forming on the vertex of the common head a large fontanelle.

“Between the truncated and the anterior inferior angles of the corresponding opposite parietal bones, are situated the frontal bones; that which is above the less perfect face being much smaller than the other, and formed one portion only, whereas the other, as is more common, is formed of two.

“The occipital, basilar, and temporal bones are naturally connected on either side, and, except that the squamous portions of the latter are very small, and the petrous portions very large, present nothing remarkable. From the smallness of the squamous bone, the alæ of the sphenoid are thrown into a direction much posterior to what is their usual direction. The same disposition occurring with respect to the sphenoid of the other foetus, the bodies and two great alæ on opposite sides oppose each other; a space intervening, which is nearly quadrangular, is occupied by the united ingrassial processes of opposite sphenoids closely compressed between the right great alæ of the bone and the left of the other. The great alæ and bodies are

also united behind these processes; and the bodies still maintaining their natural connection with the basilar bones, thus surround a central space which is oval in form, is covered by fibrous membrane, and is exactly above the common cavity into which the two mouths open.

The ethmoid bone is entirely wanting on the side corresponding to the less perfect face, and the frontal bones are there united by ossific matter, to form the roof of the orbit and the forehead of this face, the two orbits being necessarily imperfect from the absence of the ethmoid, and therefore forming one cavity.

On the side corresponding to the more perfect face there is a rudiment of the ethmoid, which is in fact the proboscis of this side. It appears to have been forced downwards and forward by the lateral pressure of the frontal bones, and is connected to their inner edges by ligament.

In the less perfect face, from the total absence of ethmoid and nasal bones, and the narrowness of the frontal bone, the superior maxillary bones are so much compressed laterally that their palatine plates form a ridge rather than a horizontal lamina. Hence the cavity of the mouth is deep, but very narrow—so narrow that the tongue, though small, cannot project into it, but lies in the common cavity which is between the two mouths, and directly below the oval opening of the sphenoids.

The other mouth, from the width of the frontal bones, &c., is large enough to receive a well-formed tongue.

Behind the tongues, which are properly attached to hyoid bones, and these to the temporal bones, is the common sac, which is the bag of the pharynx. Into this the two larynges open, covered by their epiglottides, and it terminates in a single œsophagus.

There are twelve pairs of ribs to each foetus.

The right sternal series of one foetus, and the left of the other, are received into a common sternum.

The cavity of the thorax is divided into two portions by a membranous partition proceeding from either vertebral column. In each cavity is a perfect heart in its pericardium, with a pair of lungs; and between the two hearts pass the two tracheæ, and the single œsophagus between *them*. The hearts are entirely unconnected, and the lungs have this singularity, that of a pair attached to a heart, one is the right lung of one foetus, and the other the left lung of the other foetus.

The œsophagus opens into a stomach which rather represents a square pouch than the ordinary curvilinear form of that viscus. One extremity may be called the cardia, because there is a spleen closely attached to it. There is another spleen also, but it is attached to the stomach by a much wider peritoneal fold. From the stomach proceeds a single duodenum, receiving biliary ducts from two livers connected with the single pancreas, and opening into a sac nearly of the same dimensions and form as the stomach, situated in the common abdominal space immediately over the umbilicus. To the sides of the sac are attached two coils of small intestine, each closely packed, and each

opening into, or arising from, the sac. Each coil continues to a cœcum, with an appendix vermiformis, and terminates in a long-coiled rectum.

The common umbilical cord consists of four arteries and two veins—one to each liver.

The arterial and venous systems are similar for each heart and each fœtus. Each aorta, instead of the three trunks which usually spring from its arch, sends off only one; and this divides almost immediately into the common carotids for one face, or (more correctly) into the ~~right~~ common carotid of one fœtus and the left of the other. Each aorta then arches gently downwards to the spine ~~before~~ giving off a subclavian. Each ascending vena cava ~~enters~~ the right auricle of the *other* heart than that which gives off its corresponding aorta, whilst the veins accompanying the arteries which arise from the arch of the aorta, and the left subclavian vein, form the descending cava of the same heart from whence those arteries arose. So the brain of one fœtus derives its internal carotid on one side and its two basilar arteries from one heart, and the other internal carotid from the other heart.

2. Villette (*Mémoire sur le Monstre de Vieux-Moulin*, Paris, 1828) dissected a monster having four arms, four legs, and a single head.

The construction of this monster, by the fusion of two distinct bodies, was manifest from the dissection, which discovered a double medulla oblongata attached to an encephalic mass, the duplicity of which was recognizable less from its own confusion than from the quadruple nervus patheticus, the quadruple seventh,

the triple hypoglossus, and the duplicity of the sympathetic system.

The cranium exhibited duplicity of the venous sinuses, excepting the cavernous and superior longitudinal, which was split in two posteriorly.

The cranial cavity was enclosed in front by two halves of a frontal bone (which the almost perfect closure of the fontanelles suggested to be two frontals), at the sides by two parietals and two temporals, behind by the other two temporals soldered together at their squamous and mastoid portions, and by three occipitals, the largest of which, from its relations to the united temporals and the two other occipitals, seemed to take the place of the missing two parietals, and to be transformed into an occipital for the convenience of the falciform septa.

The bones composing the basis cranii proper were simple anteriorly and duplicated posteriorly, so there were two fossæ, each pierced by a foramen magnum.

The upper jaw exhibited a double range of dental alveoli.

There were two ethmoids—one in its proper place between the orbits, the other attached to the basis cranii at the top of the pharynx.

In the mouth were two tongues, one of which, the smaller, regular in its form, was adherent to the top of the pharynx, behind the mal-placed ethmoid. In its substance could be distinguished two flat nerves which passed backward, and were lost in a reddish-whitish substance quite similar in appearance to en-

cephaloid matter (projecting from the brain into the canalis cranio-pharyngeus? T.).

Two larynges, situated one behind the other, communicated with two tracheæ, which in their turn were connected with two pairs of lungs in four pleural cavities.

A single pericardium contained a heart, apparently single, but composed of two left ventricles, giving rise to two aortæ and three auricles.

The single œsophagus, stomach, and duodenum, receiving the bile-ducts from two livers, and the double rectum, presented a similarity to Prof. Clark's case.

In short, the lumbar and pelvic organs were duplicated. "*Ces petits êtres avaient-ils conscience séparément du moi?*" inquires Villette.

3. Moreau (op. cit. sup., planches xix., xx.) figures the external appearance and skeleton of a case accredited to the museum of Pinson. It was still-born at term. The heads united to form a single face, with a chasm in the middle of the forehead resembling somewhat a female genital fissure. There were but two ears, a single tongue, a single trachea, splitting to enter the two thoracic cavities, a single œsophagus dividing for the two stomachs.

4. Michael Heiland (*Monstri Hassiaci Disquisitio Medica*. Incorporated in A. K., Boerhaave's *Historia Anatomica Infantis, cujus pars corporis inferior monstrosa*, Petropoli, 1754) details a case born in the village of Ulff, March 15, 1664. It had apparently but one head and one body, but four arms, and four legs. It had reached only the eighth month of intra-uterine

development. Its large head presented on one side, looking towards the right shoulder of one of the fused bodies and the left shoulder of the other, a well-developed face. The opposite face was represented by two ears and an eye, with right and left lids, and the dissection discovered a buccal cavity with a tongue.

The cranial bones were evidently duplicated, as were parts of the brain.

Two vertebral columns, containing two spinal cords, two sternal bones, and four sets of ribs, a pharynx connected with two mouths, two larynges covered by a compound epiglottis, two tracheæ connected with four lungs, two hearts with two aortæ (fused in a part of their subsequent course, but soon again divergent), two livers and two spleens, two umbilical veins, and duplicity of the pelvic organs, were sufficient to convince the observer that two individuals were confused to form a single monster.

Palfyn's account of this case (*Descript. Anatom.*, etc., avec un *Traité des Monstres*, Leyden, 1708) is a verbatim translation of the description in Blasius' edition of Fortunius Licetus (*de Monstris*), 1665, p. 309.

The modern student of teratology would certainly have his hands full were he to attempt the analysis and classification of all the queer forms with which the sober pages of Licetus are profusely illustrated, from frontispiece to index.

Fortunately, however, most of the cases which cannot be safely set aside as apocryphal and belonging to the traditional age of the marvellous, fall within a

few genera with which modern students are comfortably familiar.

Many of them would edify the reader of the letters of Alexander the Great to his mother; some may have been crayon sketches for Livy and tourists of his day; several are strongly suggestive of Sir John Mandeville's wonderful sights, and were evidently begotten by superstition upon credulity.

Yet others are so like authentic cases that the mention of them may not be out of place in this connection.

5. The double-faced, bicorporal girl of Berne (puella uno capite, duabus posterioribus corporis partibus) and (6) the female twins born in Thuringia with a common abdomen, thorax, and head, come quite within our belief.

Heiland ejaculates "*Jova juva!*" But quite as odd things have been seen by others.

7. Arnald (*Tractatus de Monstris*, Paris, 1570) takes the case of a boy born about A.D. 1389, with one head, four arms, and as many feet, for a text, and proceeds to expound from the fathers, and others, to us wrong-headed writers, certain embryological and psychological doctrines which in his day were probably in fashion.

Padre Ivan Eusebius (*Curiosa y Oculta Filosofia*, Madrid, 1643) comes to somewhat similar conclusions without the trouble of citing cases. The twenty-eight little chapters of his "*Libro tercero: De la animacion y especificacion de los monstruos*," are hardly seventy years more modern than the Sorbonne doctor Arnald. The "*Libro quarto: De la verdad de los monstruos fabu-*

losos," is not short enough to exclude a number of accounts long since become fabulous.

In Jacobi's collection is a pair of wood-cuts with a description of a case bearing a family likeness to that of Heiland. It is entitled "*Wahre und eygentliche Contrefactur einer Wunder*," dated Strassburg, 1606, and piously dedicated to notions which may be found in some lately printed text-books.

This monster had apparently a single head, mouth, and nose, with two eyes, four ears, four arms and hands, four legs and feet.

There was evident fusion of two bodies by the head, thorax, and abdomen, and below the single umbilical cord the two bodies were quite distinct, and of the feminine sex. The *sectis cadaveris*, briefly reported, discovered two stomachs, two hearts, two livers, and two gall-bladders. Four kidneys are mentioned. In a manuscript note appended by W. Vrolik, reference is made to Schenck; and in the "*Monstrorum Historia Memorabilis*, J. G. Schenck, Frankfort, 1609," pp. 58, 59, is a diminished copy of Jacobi's wood-cut, with a description, from which we read: "*Inventum est cor unicum, pulmo unicus, duplex jecur, ventriculus unicus, et quatuor renes.*" In spite of this and Schenck's commencement, "*Anno millesimo centesimo sexto, tertio die, etc.,*" we may suppose more than one typographical error, and believe, from the remaining similarity, that he is describing the Strassburg case.

8. Gaëtano Merulla (*Prelezione Accademico sopra di un Monstro Urnano Bicorporeo*, Messina, 1799), after a long and now useless disquisition, into which are

lugged the most forward of the ancients, figures the front and one rear elevation, and gives a short description of a monster born in Messina in 1798, with a fusion at the head, thorax, and abdomen above the umbilicus. Below the single umbilicus the two bodies were quite distinct.

One face, directed towards the contiguous right shoulder of one foetus and left shoulder of the other, was well formed. The internal structure was substantially similar to that of other cases of this teratic genus.

9. In a foot-note, p. 35, he cites a case born in Nimega, Dec. 17, 1625, with two tongues in one mouth, one head, two bodies, four hands and four feet. He adds, that the internal structure of this monster was somewhat similar to that of his, and to that of a case reported (10) by J. G. Greifel in 1670, where there was a single stomach and small intestine, with two dorsal spines, duplicity of the rectum, uterus, and appendages, two bladders, four feet, etc.

11. J. T. Klinkosch (*Programma quo Anatomicam Monstri Bicorporei Monocephali descript.*, 1767) gives a case born of a tailor's wife in Prague, July 23, 1765, when she was several months pregnant with the seventh child, "nullius unquam injuriæ externæ, imaginationis vis, aut incommodi memor."

The attendant, feeling four feet, hoped for twins, and repositied two of the feet to make way.

The head exhibited one well-formed face looking towards the approximated shoulders on one side, while the opposite face, looking towards the other approxi-

mated shoulders, was represented by two contiguous ears, the other ears being in proper relation to the full face.

The broad intermediate occiput rested upon a thick neck which contained the upper ends of the two vertebral columns; and below the neck the fusion of the two bodies was continued by the thoraces and epigastria.

The single umbilicus gave exit to two veins and three arteries, which all passed to one placenta.

A common abdominal cavity contained two livers, two pairs of kidneys sending their ureters to the two bladders, a single stomach, with a single duodenum and small intestine, which presently divided into a double cæcum, colon, and rectum.

The two dorsal vertebræ gave off forty-eight ribs, twenty-four on each side, with an intermediate sternum.

A single wide diaphragm divided the abdomen from the thoracic cavity, in which four pleural sacs contained as many lungs connected with two tracheæ, which were surmounted each by a larynx below the common pharyngeal cavity.

Two pairs of mediastina contained two pericardia, each with its own heart.

The common pharyngeal cavity, furnished with duplicate appendages, continued into a single œsophagus. The cranial bones continued the duplicate arrangement, and the encephalon itself was evidently a composite of two.

12. J. C. Zimmer (*Physiolog. Untersuch. ueber Missgeburten, etc.*, Rudolstadt, 1806) figures and describes, from the collection of Zink, a case in which a

pair of girls, born in Braunschweig, had a common head with two faces, a common neck, thorax, and abdomen as far as the umbilicus. One face, looking towards the approximated right shoulder of one body and left shoulder of the other, was apparently regularly developed, whilst the opposite face, looking towards the opposite contiguous shoulders, deviated considerably from the norm.

One eye appears perfect, but in the place of the other is a deep fold of the skin. The nose and mouth of this side are also quite imperfect.

The ears lie just near the imperfect lips.

13. C. L. Schweickhard (*Beschreibung einer Missgeburt, etc.*, Tübingen, 1861) describes a case, born March 30, 1795, of a mother who had previously borne four well-developed children. In this case were two tolerably perfect faces, looking in opposite directions towards the shoulders.

The fusion was continued by the short, thick neck, thorax, and abdomen, down to a single umbilicus, below which the two bodies were separate and of unequal size, so that the smaller appears like an appendage to the greater.

Schweickhard supplements his "description" by a very full list of teratological references, extending down to his date.

14. W. Vrolik, *Tab. ad illustr. Embryogen*; *Tab.* 96, figs. 1, 2.

15. *Tab.* 97, figs. 1, 2. "*Infans deformis, bicorporeus, monocephalus, et janiceps*; both lateral aspects of the compound skeleton; common thoracic and cephalic

cavities; each face looking towards the approximated shoulders.

Both these cases are accredited to Dr. Caron du Villard, who presented them to Vrolik's museum. They bear a striking resemblance to Heiland's case.

W. F. Montgomery (account of a very remarkable case of double monster, etc., Dublin, 1853) accredits to Dr. Bardsley, of Manchester, a case in which "the wife of a laboring man at Staleybridge, near Manchester, gave birth to a monstrosity, apparently the result of an abortive effort of nature to effect the formation of twins. This *lusus naturæ*, having only one head, is possessed of four arms and four legs; the sex is masculine, and the organs of generation are double" (Quoted from Bardsley's Retrospective Address to the Provinc. Med. and Surg. Assoc., 1837). At that time the monster was two months old, and in good health. When it was about a year old the parents moved out of observation.

A case similar to Heiland's has lately been added to Prof. J. R. Wood's museum at Bellevue Hosp. Med. Coll.

To such cases may be added those in which, instead of a nearly equal development of two individuals fused from above downwards, there is such disparity of development, and so little appearance of superior members to the smaller of the united bodies, that it seems more like an appendage than a peer of the larger.

We are so much accustomed to poll individuals, and to count our neighbors by their faces, that such smaller attached bodies, deprived of their full share of nutri-

tion, depending for their existence upon their luckier adjunct, scrupulously kept out of sight when possible, and unable to speak for themselves, have scarcely yet had their embryological importance recognized.

Licetus (op. cit., ed. Blasius, p. 10) cites from Tralian a case in which the neck of a little body was attached to the thorax of its adult congener.

Long before him such cases had been regarded as instances of what is still called "super-fœtation," but there are some theoretical reasons for including them in the same list with those whose duplicity is more thoroughly evident.

J. Lange (L. II. Epist. 8) cites the case of a child included to the shoulders in the breast of his brother, born in 1556. Although Mappe (de Acephalis, p. 17) prefers to call the less apparent child acephalous, we are defended by modern classification in placing it here. So also Ulysses Aldrovandus (Hist. Monst. c. II.) cites a case where the capital extremity of one child disappeared in the shoulders of the other.

Mappe cites similar cases from Marcellus Virgillius, Nicholas Roche, Cardanus (so well known to English readers in Burton's *Anatomy of Melancholy*), Jacob Rueff (1529), Lycosthenes (prolific in wonders), Plater, J. B. Porta, Francis Valleriola, and several others, no doubt equally veracious.

J. G. Schenck (Monstr. Hist., p. 63) cites a number of similar examples, one at least from his own observation.

Moreau cites the case of an adult male born in Naples, in 1742, exhibiting a small body attached to

his thorax by the neck. He also mentions a case born in Ondervilliers, in 1764, and says that a surgeon extirpated the superabundant parts by means of a ligature. The result is not stated.

J. Wirtensohn (*Duorum Monstrorum humanorum Descript. Anatom.*, Berlin, 1825) figures and describes such a case, in which the imperfect smaller body was fused with the larger in such a manner that the thoracic and superior abdominal regions of the larger received all the anterior surface of the smaller child above the middle of its abdomen.

At the angle of the abdominal fusion rose a single funiculus umbilicalis, having a vein and two arteries.

The larger child was tolerably perfect. The sternum, below the manubrium, was cleft in two halves, the outer borders of which received the corresponding costal cartilages, while the inner borders were in ligamentous connection with the scapulæ of the smaller body.

The pelvic extremity of the smaller body was unique, consisting of united ossa innominata supporting tolerably normal lower limbs.

The vertebral column was absent from the smaller body; yet there were parts of the normal nervous distribution to the extremities. [On this see Allen Thompson, *Lond. and Edinb. Monthly Journ. of Med. Science*, July, 1844, p. 569.]

In the common abdominal cavity the larger body had the larger share, as also in the peritonæum investing the more or less duplicated organs. Under the common diaphragm appeared a shapeless liver of

enormous size; but, when more carefully examined, it was found to consist of two hepatic masses.

A single stomach and duodenum continued into a single small intestine, which presently divided to furnish a terminal portion to each body.

In the lesser body the two kidneys formed but a single mass in close uretal connection with its bladder, and the sexual organs were quite distinct.

The only share which the minor body seemed to have in the thorax was to assist in closing the anterior wall; but to the contents it added an extra lung with a bronchus, and sent an ascending cava of its own to the heart. Its arterial connection with the major body was mostly by means of the internal mammary.

At what time, and by what process, the smaller body lost so much of its identity in the larger, teratology still leaves somewhat in the dark.

S. T. Bergholz (Dissert. de Monstro duplici, etc., Berlin, 1840) describes a case born in Braunsberg. He excuses himself from a minute dissection, "*Paucis verbis monstrum, duplex describam, quod totum dissecari non necesse fuit, quia huic simile, exactissime a Wirtensohn disquisitum, jam exstat.*"

As the anatomist and physiologist must search beyond humanity for analogies, so the teratologist, in their company, may find interesting and instructive material for his department.

It is not within the limits of this short paper to give more than a glance to the numerous cases among the beasts and birds which illustrate the topics of these remarks.

Licetus (Edit. Blasii) scatters them throughout his work with a tantalizing brevity of description which might excuse disbelief even in his dates were it not that observers nearer our own day oblige us to receive similar abnormalities in good faith. "Conradi Lycosthenis testimonio, M.D.LII., mense Februario in domo Ludovici Dheitæi, felis domestica inter reliquos fœtus numerosos, enixa est catellum vivum, monocephalon, bicorpore, octipedem, etc.," is a type of some accounts which, in spite of his explicitness, may be received *cum grano salis*.

So J. Plancus (Epistola de Monstris, Venice, 1749) expects us to receive his cats with a common head, thorax, and abdomen, down to a double umbilicus, in the same spirit as his motto, "Literarum felicitas."

Gerard Blasius (Observationes medicæ rariores, Amsterdam, 1677, p. 57) had set an example by detailing the history of a monstrous lamb, dissected by Maurice Hoffman Oct. 8, 1672. In this case the fusion was continued to the umbilical region.

Moreau (op. cit., p. 9) cites from the "Cabinet du Roi de France" the case of a pig with two well-formed bodies united by the thoraces. It had a single head and three ears, two of which were placed in the natural order, and the third near the opening of the lips. He also mentions a sheep in the museum of M. Pinson, in which two bodies had a common head and thorax.

A. W. Otto (Seltene Beobacht. zur Anat. Phys. u. Path. gehörig, Breslau, 1816) describes a monocephalic, bicorporal hen; a lamb in which were united two bodies, with a common head and common thorax;

a similar lamb, in which each of the combining bodies had lost a fore leg; and another similar, but cyclopic lamb.

N. Joly (*Etudes anatomiques sur un agneau bimalé*, etc. *Mémoire lu à l'Acad. des Sciences*, etc., de Toulouse, Jan. 19, 1843) describes a monstrous lamb composed by the fusion of two male bodies.

A single cord, composed of one umbilical vein and two arteries, was implanted upon the body lying to the left of the axis of union, a little below the point where the fusion of the two bodies commenced. The head had some resemblance to that of an ape, and was considerably larger than normal. It exhibited well-formed eyes, a normal mouth, perfect lips, and an imperfect nose. Two ears occupied the superior and lateral parts of the head; two others, lying close together, and with a common meatus, were situated near the common occiput.

The head rested upon a short neck, which was widened to contain two perfect cervical vertebral columns.

The two thoraces were united, as also the abdomens as far as the umbilical region, below which the two bodies were quite regularly developed.

In the skeleton it was easy to recognize two perfect vertebral columns, each provided with thirteen pairs of ribs, connected with two sternal bones which were lateral in respect to each individual.

The compound basis cranii was pierced by two occipital foramina, and the bony elements of the two faces were quite distinct though unequally developed.

The nervous system exhibited two spinal marrows,

with corresponding duplicity of the spinal nerves and great sympathetics, two cerebella, and a single cerebrum, in which the confusion of two earlier cerebra was pretty evident.

A single well-formed tongue; a second in a rudimentary condition; a large and common pharynx; a short single œsophagus leading to a single stomach; a single intestine, in part common to the two bodies, but presently dividing to furnish a part proper to each; a double spleen, liver, and pancreas completed the general composition of the digestive apparatus.

Two hearts distributed blood normally, excepting as to a tube of communication between the two aortæ, [that the non-umbilicated body might receive an early supply of the nutritive fluid?].

Two larynges, each furnished with an epiglottis, led into two tracheæ, which divided into four bronchi to supply as many lungs.

(To be continued.)

THE PATHOLOGY AND TREATMENT OF MEMBRANOUS
DYSMENORRHŒA.

BY DR. F. MANDL, Vienna.

(Translated from Wiener Med. Wochenschrift, No. 1, 1899.)

THE knowledge of dysmenorrhœa membranacea (*decidua menstrualis*; *dysménorrhée membraneuse*; etc.) does not yet rest on a firm scientific basis, the fact of its occurrence even being denied by many. It may,

therefore, be interesting to report a typical case of this disease, and to give, in addition, the opinions of medical writers on this subject.

Morgagni furnished the first interesting description of this affection.

He mentions that his patient became pregnant, but aborted at an early period, and that the disease did not yield till after the cessation of the menses. *Denman* describes the smooth internal and rough external surfaces of this membrane, thus affirming its similarity to the decidua gravida, as described by *Hunter*. *Churchill*, *Copland*, *Montgomery*, also mention this affection, the latter of whom says: With regard to texture this membrane resembles more the decidua reflexa than any other formation, but it is impossible to discover in or on it any trace of the translucent membranes of the ovum, and if the whole should happen to be expelled in the shape of a hollow triangular bag, there never will be found a duplicature like an inner pocket or a reflected layer, as is the case in the natural deciduous envelopes of the ovum.

He further believes it is right to ascribe such products (dysmenorrhœal membranes) to any cause apt to bring about a certain degree of irritation or inflammation, in consequence of which fibrine exudes on the inner surface of the uterine cavity, and assumes a membranous form, as happens in other hollow organs lined by mucous membrane: *i.e.* trachea, bronchi, etc.

Most of the older authors were of the same opinion. Thus *Dewees* tries to explain the formation of these membranes by the coagulable lymph of the menstrual

blood, and *Siebold* relates several cases, representing them either as false mole pregnancy, or as membranous formations. The same opinions are entertained by other writers, as by *J. P. Frank*, *Naegele*, *Meissner*, *Moser*, *Desormeaux*, *D. W. Busch*, and others.

Simpson and *Oldham* published their investigations about the same time, rendering the nature of this affection clearer, the results of which, extended and confirmed by other researches, stand approved up to the present time, thus refuting the views of the older authors about the identity of menstrual membranous formations, with croupous membranes formed by coagulable lymph.

Of the modern authors we mention *Virchow*, *Dubois*, *Follin*, *Lebert*, *Kiwisch*, *Ashwell*, *Tyler Smith*, *Robin*, *Rokitansky*, *Scanzoni*, *Hegar*, *Holst*, *Klob*, *Hirschfeld*, *Courty*, *Hennig*, *Eigenbrodt*, and others, all of whom confirm *Simpson's* opinion. The latter defends his views by saying: "Inflammation may be connected with these membranous discharges; inflammatory induration and ulceration of the cervix may be present; it is only essential that the normal action of the uterus and ovaries causing the formation of this membrane be not a state identical with inflammation, but a state identical with that which takes place in this organ after fecundation, during the first weeks of pregnancy. Thus far, this condition and its product is natural—with reference to a special function of the uterus—only that this condition occurs at an unnatural time, under unnatural circumstances, and abnormally frequent."

He proves this opinion in the following manner: (1)

The dysmenorrhœal membrane has not the same anatomical qualities as an inflammatory fibrous exudation. (2) The general configuration and the character of the surface of the dysmenorrhœal membrane correspond to the exfoliated uterine mucous membrane, it being possible to distinguish, in such an expelled membrane, three orifices, an inner smooth, and an outer rough villous, torn surface, and (3) the dysmenorrhœal membrane resembles the decidua vera. With regard to the latter, the investigations of *Scharpey*, *Weber*, and others have shown that it is not a new membrane, but that it consists of the normal hypertrophied uterine mucous membrane, with the mucous glands and follicles enlarged, and the intercellular tissue more developed. The dysmenorrhœal membrane has also the same triangular shape, its outer surface is villous, furrowed, with the same sieve-like appearance as in the decidua vera. The microscopical examination of both membranes proves them to be of the same structure, viz.: agglomeration or superposition of simple nucleated cells. This anatomical identity of both membranes permits, therefore, the assumption of their equal origin.

Oldham has found, in the cases observed by him, that considerable congestion towards uterus and ovaries precedes and accompanies the decidual affections of the uterine mucous membrane: especially at the beginning of the catamenia the ovaries are believed to swell sufficiently to be plainly felt through the abdominal walls. He explains, as a consequence of the frequent congestions, and the subsequent accumulation of blood and distention of the vessels, the retroversion of the uterus

observed by him, the greater tumefaction of the posterior uterine wall enabling him to distinguish this disease from pregnancy of the first weeks, in which case, generally, the anterior wall becomes more prominently developed.

Virchow calls menstruation a pregnancy in the smallest degree, and he proposes the designation of decidua menstrualis, instead of dysmenorrhœal membrane.

Semelaigne describes the occurrence of the dym. membr. as an idiopathic disease; he relies especially on the views of *Oldham*, mentioning as premonitory symptoms, cephalalgia, pains radiating towards different parts of the body, intestinal disorders, frequency of the pulse, etc., finding these symptoms to exist in a greater or lesser degree nearly during the whole period. After referring to older authors, *Riolan*, *Ætius*, and others, he gives a detailed account of the cases of *Follin* and *Lebert*.

Scanzoni has observed twenty-one cases of decidual disease, of which only two complained of a spontaneous escape of membranes. In one case the interesting observation was made of the presence of a small flattened blood coagulum within the membrane.

He ranges this affection among the congestive dysmenorrhœas, and explains the painful expulsion by the fact that the blood, being prevented from transuding by the tumefied mucous membrane, gradually loosens the membrane, thus causing its final expulsion.

Hegar and *Eigenbrodt* designate this affection as "dysmenorrhœa apoplectica;" if, however, the catamenia be absent for a longer period, they believe it to be impossible to exclude conception with certainty, although

no remnants of the ovum be perceptible, such as chorion or amnion, the foetal organization having either perished, or not been noticed on account of its small size.

The other gynæcologists and pathologists of the present time, such as *C. Braun*, *Rokitansky*, *Klob*, *Robin*, *Courty*, *Mayer*, and others, maintain *Simpson's* views.

These opinions, as quoted above, are taught and approved by most of the authors not mentioned specially.

Among those authors denying the existence of a decidual affection of the uterine mucous membrane, *Hausmann*, in an elaborate essay delivered before the Obstetrical Society of Berlin, pronounced the following opinions: He rejects (1) a decidual menstrual disease of the uterine mucous membrane as a *morbus sui generis*; believes (2) that all cases reported as decidual affection are to be reduced to a miscarriage in the first weeks of pregnancy, caused probably by some morbid condition of the ovum. He further considers (3) the coincidence at the time of menstruation to be incidental; and says finally (4), that a symptomatic treatment and abstinence for a few months is sufficient to cure this affection. In proof of his assertion he cites *d'Outrepont*, who is believed to have produced a cure, and even subsequent pregnancy in a case of monthly expulsion of membranes of two years standing, by simply forbidding cohabitation, the same means proving effective in a relapse after lactation had been arrested.

We now come to the history of the patient, which, being already highly interesting in itself, is rendered very instructive on account of the views and opinions obtained from the several authorities concerning it.

Mrs. T. has been ill for the last fifteen years, having been treated during this period by most of the prominent physicians of this continent. For about one year she has been under the care of myself and Dr. *Lumpe*, in addition to which, Profs. *Oppolzer* and *Spoek* have also been called in consultation. In the course of this communication all the data obtained from the different physicians will be reported, as they are of the highest interest. With regard to the microscopical examinations, we are under great obligation to Prof. *Rokitansky* for his great and obliging kindness.

The first exact observation and diagnosis of this case was made by Prof. *Matwejef* of Kiew, whose letter we give verbatim:—

1. *Letter of Prof. Matwejef.*

The patient is now thirty-seven years of age, having been married since her fifteenth year. Before that period she had not yet menstruated, but the menses came on immediately after the first cohabitation, and continued to appear every month. She became pregnant four months after her marriage, and was delivered at the proper time, the labor being easy and lasting 6 hours. The secretion of milk was very copious. A few days after delivery she felt severe pains in the abdomen, which soon yielded to the application of leeches and the use of internal remedies. Eight days after confinement, she left her bed, feeling, however, very weak. After nursing the child for three months she weaned it, at the request of her relatives. She again became pregnant soon after, and passed through a nor-

mal confinement. She nursed this child only three months, like the first. During this time she was attacked by mastitis, resulting in the formation of an abscess. After her second delivery the patient felt very weak, suffering especially from vertigo and palpitation of the heart.

3½ years after her second confinement she again became pregnant: during this whole period the menses were always irregular, lasting generally from 10—12 days. In the beginning the patient had strong pains in the abdomen and headache, suffering also from costiveness and constipation. The physician who examined her at that time found the cervix uteri to be hard and hypertrophied, for the cure of which he administered different remedies till the event of her third pregnancy. During this period she was continually ill, complaining especially of headache and palpitation of the heart. A short time even paralysis of the muscles of one half of the face supervened. In addition to this, the patient suffered greatly. The physician in attendance at that time thought it necessary to resort to venesection, which, however, gave her no relief. The third confinement was, like the others, normal. She again weaned the child after 3 months, when the menses reappeared, irregular as heretofore. In order not to become pregnant soon, the patient abstained from all sexual intercourse for 9 months.

A year after her third delivery the patient became pregnant for the fourth time, suffering during that period the same as previously. She nursed the child for 3 months, and then abstained from cohabitation for

9 months. 1½ years after her fourth delivery she became pregnant for the fifth time, and was delivered at the regular time. After confinement she was again attacked by mastitis. The patient was 22½ years old at the time of her fifth delivery, and has had no children since. She was continually ill during these 15 years. Several days before confinement she felt a more or less strong pain in the abdomen, and especially over the right ovary. The urine was, during this time, very turbid, a strong deposit of urates forming at the bottom. Menstruation occurs more often than in the normal state, usually every 14—15 days. When menstruation ensues, blood passes off in sufficient quantity, then it suddenly ceases flowing for 24—36 hours, when it reappears and escapes for several hours. During the first days of menstruation, membranes escape from the uterus, which are of a villous appearance and looking like decidua. During the above-mentioned pauses, the patient feels much worse. Defecation usually happens daily, although there are some hemorrhoidal tumors of considerable size, which the patient is obliged to replace after each passage. On examining the genitals the following is found: The uterus is placed very high, so that the cervix can hardly be reached by the finger. The os points strongly backward, the anterior lip is hypertrophied, hard knobs being felt on it before each menstruation. A few days before this period there appear frequently around the os white vesicles filled with pus, the anterior lip then being tense and glossy. Excoriations were not present. On examining after menstruation, the cervix is found to be softer, neither tense nor glossy.

Of external remedies the patient has used especially astringent injections; local depletion and scarification were also employed several times. Of internal remedies, she used for a longer time aurum natron chloratum, borax, and nitre. All these medicines gave no relief; chalybeates rendered her worse, by aggravating the excitement.

KIEW, June, 1867.

Already, in 1866, Professor *Matwejef* accompanied the patient to Paris, and she there consulted Messrs. *Depaul*, *Varni*, and *Trousseau*, the results of whose consultations are given in the following:—

2. Mrs. T. consulted us, accompanied by her family physician, who gave us a complete and well-written history of the case. We the undersigned physicians, called upon to give our opinion, have made an examination and found the following results: In the abdomen no swelling can be perceived by palpation; the walls are thin; by pressing, a violent pain is felt over the os pubis and in the right inguinal region. The examination of the uterus with the finger and speculum shows no dislocation; there are no adhesions, and it is perfectly movable. Its fundus is not increased in bulk, but there is increased sensibility. The neck is considerably swollen; its tissue is somewhat thickened, but perfectly smooth; only on some places a few prominent red points, the results of an inflammation of a few mucous follicles, are observed. No trace of ulceration. On the external os there are small quantities of a tough stringy secretion.

The cervix uteri is the seat of violent pain, caused by

the slightest pressure of the finger. Patient also complains of palpitation of the heart. Auscultation reveals a slight murmur in the præcordial region.

There is no doubt that the sufferings of the patient are caused by some affection of the sexual organs. After consulting, we have proposed the following plan of treatment :

1. To apply the actual cautery (?!) to the cervix, which ought to be renewed after 14 days. The obtained results would decide as to its repetition.

2. Employment of the hydropathic method for 2 or 3 months.

3. The internal use of preparations of iron, especially of the iodide of iron.

4. Avoidance of every exciting circumstance which might have an effect on the nervous system or the genital organs.

PARIS, August 1, 1866.

3. Therapeutical Advice of Dr. Trousseau.

At a consultation which was held with Dr. *Trousseau* August 3, 1866, in Paris, the latter advised Mrs. T. to take the following: Ol. terebinth. depurat. in the course of 3-4 months, to begin with 20 drops 3 times daily, and to increase the dose continually up to 2 drachms.

He furthermore suggested the employment of long-continued warm baths, at a temperature of from 100°—104°, between the catamenial periods; also the local douche of a decoction of *datura stramon.*, *bellad.*, *hyoscyam.*, or some other narcotic remedy. Concerning the

warm baths, the patient was to use them up to 6 hours daily. (?)

In August, 1867, the patient came to Vienna and applied to Dr. *C. Braun*, who, upon her request, put the following down in writing:—

4. *Opinion of Prof. C. Braun.*

After having observed Mrs. T. for 2 weeks, I find the patient to suffer from a great excitement of the nervous system before the appearance of the menses. The tissue of the genitals is normal; cervical mucus is moderately secreted; the vaginal portion is without excoriations; the body of the uterus is movable and not enlarged. No decidua catamenialis came away at the menstruation in August, as was observed several times by the patient and Prof. *Matwejef* of Kiew. In my opinion the irregularities of menstruation will disappear as soon as the chronic state of inflammation has been abated by cauterization of the uterine cavity with the solid nitrate of silver, to be applied 3 times a month, and as soon as the intense and painful excitement is diminished by the administration of 2—3 drops of Fowler's sol. daily.

VIENNA, August 23, 1867.

I saw the patient for the first time in October, 1867, when she told me the following: She has been ill for the last 15 years, but not till two years ago was her attention directed by Prof. *Matwejef* to the membranous discharges, which she has since observed regularly up to the present time. Upon the advice of Profs. *Matwejef* and *Moering*, she drank the waters of

Krankenheil during the summer of this year, felt comparatively better, and left then for Vienna. In the month of August she was unable to give an account about the membranous discharge, having been preoccupied by the journey and change of residence. In Vienna she was treated by Prof. *Braun*, and occasionally Prof. *Oppolzer* and Dr. *Lumpe* were called in. The above-named cauterizations with nitr. of silver were made 3 times. The patient says that after the third application the nervous symptoms became worse and the painful sensations in the abdomen increased. (?)

Profuse and painful menstruation occurred 8 days before the normal time. The discharge of a membrane was not observed. The patient having been very much reduced by the loss of blood and the pain, the cauterizations were suspended and the bromide of potassium administered internally instead.

In the beginning of October the menses appeared with the usual symptoms; a membrane was discharged on the second day, which was examined by Prof. *Wedl*, who supposed it to have been an abortus. The patient denied the possibility of a supposed pregnancy decidedly, and became so much alarmed in consequence that she sent her daughter with this membrane to Prof. *Treitz* in Prague, without, however, mentioning its origin. Prof. *Rokitansky* also examined the membrane at the same time, and the opinion of both physicians agreeing, that these membranes resembled very much the products of pregnancy, placed the patient at rest.

We give below the results of the microscopical examinations of Profs. *Wedl*, *Treitz*, and *Rokitansky*, from

which the deceptive similarity of decidua grávida and decidua menstrualis may be seen.

5. *Result of Prof. Wedl's Examination.*

The membranous discharges from the uterus consist mainly of two layers: a superficially smooth one, with evenly distributed fissure-like gaps; connected with a lower layer, composed of numerous protruding slender follicles arranged in groups. The latter are sharply defined, rounded off at their free extremity, attached to ramifying pedicles and lined by an epithelial layer which may be easily scraped off. The other red-colored clusters are coagulated fibrine infiltrated with blood.

This proves that the membranes belong to the decidua and chorion, and are parts of an ovum of the first few weeks of pregnancy.

VIENNA, October 8, 1867.

6. *Result of Prof. Treitz's Examination.*

The specimen given to me for examination comes from the body of the uterus, and is a piece of the epithelial layer of the inner surface, thickened by abnormal growth and separated entirely, together with the glandular processes. There are also fresh and old blood coagula, having the shape of the uterine cavity, to which is attached vaginal epithelium. I did not find permanent elements of portions of the mucous membrane itself, nor any pathological growth of tissue.

PRAGUE, October 17, 1867.

7. *Result of Prof. Rokitansky's Examination.*

The specimen sent to me October 17, 1867, for ex-

amination, is a white membranous shred which, under the microscope, proves to be a piece of the uterine mucous membrane in a state of decidua-like development. Discharges of this kind, continuing generally during a long series of menstrual periods, do not occur rarely, I having myself repeatedly observed cases of this kind. The development of the mucous membrane is in excess of its usual menstrual degree. It is not, however, connected with conception. The same is the case with regard to the separation, either the whole or part of the uterine mucous membrane being discharged.

VIENNA, October 19, 1867.

The employment of the caustic, used heretofore by Prof. *Braun*, was modified by Dr. *Lumpe* in such a manner as to apply a solution of the same every other day with the brush. Thus, a solution of the nitrate of silver, of the strength of 2 grs. to the drachm, was applied to the uterine cavity 7 times. The treatment had no effect on the course of the disease, causing, however, no further pain. In November menstruation ensued with the usual preliminary symptoms; the decidua came away on the second day; the bleeding ceased for two days, when it reappeared, and stopped on the second day following. From this time I treated the patient together with Dr. *Lumpe*. Frequent careful examinations give the following data in addition to those above mentioned:—

Mrs. T. has a tall figure; looks well preserved, considering the length of her sufferings; and possesses a lively, happy humor, whenever she is free from nervous symp-

toms; all the internal organs, heart, lungs, etc., are perfectly normal, with the exception of the uro-genital system.

The digital examination shows the temperature of the vagina not increased; very scanty secretion. On examining, in the upright position, and passing the finger upwards along the anterior wall of the vagina, it becomes clear that its folds and corrugations have almost entirely disappeared, the laquear proper cannot be recognized, and instead of forming a roof the anterior wall of the vagina passes in a straight line from the upper portion of the symphysis backwards and upwards to the os sacrum. The neck is found near the os sacrum, the posterior lip being pushed upwards so as to touch the posterior cul-de-sac. The body of the womb, which is very tender to the touch in its upper section, can be distinctly felt, stretching from the os sacrum towards the symphysis pubis in such a manner that the fundus appears to be below the os uteri. It is with great difficulty the index finger can be made to pass behind the cervix. The uterus can be partly replaced by pulling the neck forward, and is easily carried into its normal position by manipulating the fundus with the hand placed on the abdomen. It falls back, however, as soon as the hand is withdrawn from above the symphysis pubis. The tissue around the os uteri does not seem to be altered in its texture; around its edges a few ovula Nabothi are found, which are not tender to the touch. The os is not enlarged nor fissured. The sound can be introduced easily not much over $2\frac{1}{2}$ inches. During the first days after menstruation there is a discharge from the womb of a few drachms of a clear ropy mucus; this mucus

is only discharged at the time the bladder or rectum is emptied, and, occasionally, with painful uterine contractions. The urethra is painful throughout its length, but especially towards its upper section.

The body of the uterus pressing on the neck of the bladder causes tenesmus, in consequence of which urine is voided more frequently and each time in small quantities. Whenever tenesmus ensued, the urine was especially concentrated, containing a large amount of salts, mostly urates. Upon the appearance of symptoms of great general irritation, the urine changed into the so-called spastic, white watery urine, containing relatively but small quantities of salts.* Mention may be also made of the hemorrhoidal complaint, so frequently occurring with uterine dislocations, in addition to which there was another remarkable symptom which was supposed to be caused by an anomaly of the nutrition of the smallest capillaries, viz., the occurrence of extravasation of blood under the skin without any cause, as in scurvy. These subcutaneous hemorrhages took place in an irregular manner, and disappeared spontaneously.

Of the subjective symptoms we mention :

The local sensations of pain, manifesting themselves by periodical labor-like contractions of the uterus, caused usually either by the discharge of mucus, blood, or membranes.

* The chemical analysis showed in an amount of 150 cubic centim. urate of potass. and epithelium; color turbid yellow, reddish; urinous smell; acid reaction; uric acid, and urrhodin greatly increased; no carbonate of ammonia, nor any other abnormal substance; also an increase of chlorides, alkaline and earthy phosphates. Specific gravity 1030.

The local symptoms of irritation, consisting of bearing down pain of greater or lesser intensity, which proceeded from the region of the symphysis towards the floor of the pelvis and the os sacrum, especially to the right, more rarely to the left side, and affecting in the same manner both thighs; there were also gnawing boring pains in the abdomen, which were especially severe before the appearance of the menses, in addition to which there was a considerable feeling of fulness and heaviness towards the rectum, frequently combined with tenesmus of the bladder. The sensation of drawing and gnawing extended often to the epigastric region and sometimes became unbearable, either in consequence of tympanitis of the whole abdomen, or from a troublesome contraction of the intestines towards the spinal column.

The reflex and irritative symptoms. These were manifested as disturbances of the general health, consisting of a feeling of continued restlessness, lassitude, exhaustion of the extremities, sleeplessness, violent palpitations, dizziness, etc. Such sensations excited the *anima* of the patient to a great degree, representing, together, symptoms usually designated under the name of hysteria. In our patient, however, these intense nervous sensations were preliminary and co-ordinate symptoms of actual processes taking place in the sexual organs.

We may also add that the patient watched herself most carefully, and was thus enabled to draw precise conclusions from some subjective symptoms. She could inform us almost correctly of the date of menstruation,

the discharge or retention of the decidua, the greater or lesser bleeding from the hemorrhoids, or sexual organs, etc.

The symptoms, as described above, changed in their varieties only in intensity, each time 8—10 days before the catamenia took place; during this period the patient felt worse, relatively best after the discharge of a membrane.

The most essential symptom of this disease is the elimination of a membranous formation during the menstrual period. This membranous formation is usually expelled on the 2d day of the menses, sometimes with moderate, frequently, however, with very painful symptoms. If the patient is, on this occasion, kept under observation during the first 48 hours of the catamenial period, one unacquainted with the circumstance would easily be induced to suspect an abortion *en miniature*. We find, generally, increased loss of blood, periodical contractions, more or less intense pain, extending to the vulva, sacrum, rectum, and thighs, which ceases entirely after the discharge of a membranous formation which, upon the first sight, shows exactly the villous appearance of the chorion of the first weeks of pregnancy. Such membranous discharges are, however, not always expelled in integro; frequently 3 or 4 shreds escape, in which case the morbid symptoms are protracted. After the escape of the whole, or each single portion of the membrane, a feeling of weakness and exhaustion, even amounting to fainting, ensues, lasting often $\frac{1}{2}$ to 1 hour; after some time the patient recovers; still her features remain for a long time changed and haggard; the ex-

limbs are cool; frequent chills, with a small quick pulse up to 120 follow. The following day the symptoms change; the patient recovers rapidly, and feels generally best during the last days of menstruation. We had frequently occasion to observe these membranes, which were of the following appearance in the months of November and January: The first time there were two flaps fitting each other, and connected only by a small lateral bridge. Their color was, in the recent state, somewhat reddish; they changed, however, into a white yellowish color after being immersed in water or alcohol. By placing one of these flaps before us, with the smaller end downwards, we found an upper, and two concave downward-extending edges terminating in a lower blunted end. The whole presented to the first sight a surprisingly similar configuration of the inner uterine cavity. The inner surfaces were smooth, appearing, however, on close inspection, furrowed, while the magnifying glass revealed a large number of very fine orifices, and sometimes slender blood coagula which could be easily removed. The outer surfaces were always covered with thin blood coagula which could be easily scraped off after having been placed in water, when a surface of a finely villous appearance, floating in the water, was exposed.

The second membranous discharge consisted of 5 fragments of different size, which did not represent a continuous mass, but showing plainly, however, the inner smooth and outer rough surface. Those discharged in November were expelled at one time; those discharged in January came away in single pieces. The length of

the whole membrane was $4\frac{1}{2}$ ctm.; its greatest width $2\frac{1}{2}$ ctm. With regard to the microscopical structure, we refer to the previously-mentioned examinations of Profs. *Treitz* and *Rokitansky*, which agree with those made by *J. Mueller*, *R. Wagner*, *Koelliker*, *H. Mueller*, *Seiler*, *Robin*, *Scanzoni*, *Eigenbrodt*, and *Hegar*, which will be reported hereafter.

The decidua menstrualis consists, essentially, of spindle-shaped cells closely attached to each other, polygonal or roundish cells containing one or two nuclei, free nuclei, and molecular detritus. Ciliary epithelium is but rarely observed. The texture of no other formation can be found in this membrane.

From the above history we are enabled to presume :

1. *A complete anteversion of the uterus.*
2. *The presence of that affection generally denominated dysmenorrhœa membranacea, and its product, decidua catamenialis.*

3. *A group of reflex and irradiation symptoms caused by the morbidly affected and displaced uterus, thence probably conducted through the sympathetic system and sacral plexus of nerves toward the medulla, whence they emanated as the most manifold neuroses, or as a collection of those symptoms known as so-called hysteria.*

The prognosis is generally unfavorable in *dysmenorrhœa membranacea*, not only with regard to conception, but also to its cure. This view is confirmed by most of the cases reported in literature. In recent cases, however, the local as well as general disturbances are frequently of such a moderate nature, that the affection is very easily overlooked; and it may be justly said that an

early recognition of the morbid process does not exclude conception or cure; even in advanced stages conception and cure (*Siebold, Tyler Smith, D'Outrepont, and others*) have been reported, while in some cases an improvement and alleviation of the disease may be obtained. The uncertainty and failure of our present treatment depends partially on the entirely unknown pathogenesis of the malady, and partially on the circumstance that generally only such cases come under treatment as have already, from their duration, caused greater consecutive disturbances.

(*To be continued.*)

THE HISTORY OF FOUR CASES OF CHRONIC INVERSION OF
THE UTERUS, WITH THE ACCOUNT OF AN OPERATION
DESIGNED AS A SUBSTITUTE FOR AMPUTATION.

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It is not certainly known whether the condition which we style inversion of the uterus, and which consists in the turning of the uterus inside out, was understood before the time of Ambrose Paré. Since his epoch, it has been fully described by his successors, and all its pathological features, its various symptoms, and its manifold dangers, have been thoroughly appreciated. From the time of Paré, however, who lived about the middle of the 17th century, to our own,

although great advances were made in the scientific departments of the subject, very little was attained in the way of treatment. The possibility of replacing, by taxis, a uterus recently inverted, was understood, but for cases in which the organ had been displaced for years, or even for months, no resource existed, except amputation.

It is certainly one of the many triumphs of which the gynecology of the 19th century can boast, that this accident has been proved to be amenable to conservative measures, and that taxis has been shown to be capable of effecting a cure, and preventing a resort to a mutilating surgical procedure. There can be no doubt that the urgency of the symptoms which attend upon inversion is sometimes so great that a resort to amputation, after failure by other means, is rendered perfectly legitimate. But, on the other hand, every surgeon must shrink from a procedure which destroys his patient's capacity for the performance of two of her most important physiological functions, and no one can view it in any other light than that of a last resource.

So far as I have been able to ascertain, the first cases of chronic inversion which were successfully reduced by taxis are those mentioned by Colombat* in the following passage: "Dr. Daillez reports, in his dissertation, that the surgeon Labarre De Benzeville had effected the reduction as late as the eighth month; and Baudelocque, after eight years." In later times, the first case of success occurred in 1847.† The inversion

* Colombat, Amer. Ed., p. 186.

† Quoted from Ranking's Abstract, vol. 7, by G. Hewitt.

had lasted more than a year, when M. Valentin, by introducing one hand into the vagina, and making counter-pressure by the other over the abdomen, succeeded in reducing the displaced fundus in ten minutes. In 1852,* Mr. Canney, in the same manner, effected reduction in a case of five months' standing, and in the same year† M. Berrier accomplished it in one which had existed for fifteen months. Four years after this, Dr. Tyler Smith, of London, effected reduction in a case of twelve years' standing, by combining taxis with pressure through the vagina by a caoutchouc bag filled with air. More than a week was consumed before his persevering efforts were crowned with success. Cases of cure effected by taxis alone, or combined with pressure by bags of air or water placed in the vagina, were after this rapidly reported from different parts of the world. Most notable among these were the cases of White, of Buffalo, in 1858, of fifteen years' standing, and Noeggerath, of New York, in 1852, of thirteen years' standing. Within the past ten years, cures have multiplied so rapidly as to preclude the mention of individual cases in an essay of the character of this.

The prognosis of chronic inversion is at all times grave. Repeated and prolonged hemorrhages prostrate the patient, and expose her to all the risks of the worst forms of uterine polypi. But not only is she exposed to dangers inherent to the displacement from which she suffers; those attendant upon an erroneous diagnosis are very great. To one alive to the possibility of con-

* Quoted from Ranking's Abstract, vol. 7, by G. Hewitt.

† Courty, p. 797.

founding the condition with fibrous polypus, the methods of differentiation are numerous and reliable; but to the rapid and careless diagnostician, who does not allow that possibility to enter his mind, and consequently does not carefully weigh the evidences in favor of and against it, there is a great likelihood of error. The following table, presenting at a glance the chief points by which differentiation may be established, will serve to illustrate the first part of this statement, while a reference to statistics which will follow it will corroborate the second.

<i>If it be a polypus,</i>	<i>If it be inversion,</i>
The probe will pass by its side into the uterus.	The probe and finger will be arrested at the neck.
Conjoined manipulation will reveal the uterine body.	Conjoined manipulation will reveal a ring where the body should be.
Rectal touch will reveal the uterus.	Rectal touch will not discover the uterus.
Recto-vesical exploration will reveal the uterus.	Recto-vesical exploration will not discover the uterus.
The pedicle will usually be small.	The pedicle will be large.

These signs will attend only complete inversion. Where the inversion of the body is only partial, much greater difficulty will be found in differentiation. The following are the most reliable means at command:

<i>If it be a polypus,</i>	<i>If it be inversion,</i>
The probe will show increase in dimensions of uterine cavity.	The probe will show decrease in dimensions of uterine cavity.
Conjoined manipulation will reveal body of uterus of normal shape.	Conjoined manipulation will reveal small abdominal ring.
Rectal touch will show uterus to be smooth.	Rectal touch will show abdominal ring.
It will have come on gradually.	It will have occurred suddenly.
It will have no reference to parturition.	It will usually have followed parturition.

One who is aware of the great frequency with which amputation of the inverted uterus has been practised under the impression that a fibrous polypus was being removed, cannot but wonder that errors of diagnosis have so often occurred when so many methods of differentiation were at command. The explanation is that to which I have referred, namely, that the possibility of error was not entertained. Out of fifty-eight cases of inversion of which a report is given hereafter, and in which amputation was practised, seven were mistaken for polypi.

Even where a correct diagnosis has been made, still another danger menaces the patient—that of rupture of the vagina in efforts made at reduction of the inverted organ. A small hand, a cautious, unexcitable mind, and constant vigilance during all efforts by taxis, must be combined with thorough knowledge of the subject, to avoid this imminent danger. Even with this combination it is a matter of surprise to me, from my experience with these cases, that the accident has not occurred much oftener, and I confess that I should prefer to trust a patient in whom I felt great interest to the operation of abdominal section, as described in case fourth, than to that of prolonged taxis at the hands of a rough, unintelligent, and inexperienced practitioner. To one thinking upon this subject for the first time, this position will appear exaggerated and indefensible; but I assume it after mature reflection.

In the treatment of inversion, three methods have heretofore been adopted.

1st. The organ has been left in malposition; hemorrhage being controlled by hæmostatic means.

2d. The displaced organ has been amputated.

3d. The inversion has been reduced by taxis, by elastic vaginal pressure, or by a combination of the two

The consideration of the first of these does not come within the scope of this essay. That of the second and third will occupy us immediately.

Amputation of the uterus has been effected by the knife, the ligature, the *écraseur*, by the knife or *écraseur* preceded by the use of the ligature, or by the galvano-caustic. Amputation, however practised, not only destroys the woman's capacity for child-bearing, and impairs that for menstruation; it likewise exposes her life to danger from hemorrhage, from septicæmia, from peritonitis, and from amputation of a loop of intestine contained in the inverted uterus. Dr. Charles West gives us the following table of the results of the operation practised by the various procedures which I have enumerated.

	Cases.	Recovered.	Died.	Operat'n abandoned.
Uterus removed by ligature.	45	33	10	2
" " by knife or <i>écraseur</i> . . .	5	3	2	
" " " " " "				
preceded by ligature. . .	9	6	3	
	<hr/> 59	<hr/> 42	<hr/> 15	

By this statement it will be seen that about one-quarter of all operated upon died, and let it not be forgotten that this quarter died, not in being cured, not in an effort, even, at attaining perfect health, but in an attempt at purchasing immunity from a series of danger-

ous and annoying symptoms at the price of that organ of which Hippocrates says, "propter uterum est mulier."

IN THE AMERICAN JOURNAL OF OBSTETRICS, etc., for August, 1868, appears a résumé upon the subject translated from *Beitraege zur Geburtskunde und Gynaekologie*, to which the reader is referred.

"Record of Removal of the Inverted Uterus by Ligation, Excision, and by both combined.

I.—REMOVAL BY LIGATION.

a. Cases terminating successfully.

I.—1767. Faivre, Journ. de Méd., 1767, Août-Labrevoit, l. c., pag. 49. Patient nineteen years old, irreplaceable inversion after birth; threatening gangrene. Separation of uterus on twenty-seventh day.

II.—1824. Rheineck, Siebold's Journ. Bd. 5, dag. 628. Inversion of one month's standing. The ligated tumor soon (?) separated.

III.—1818. Newnham (an essay of inversio uteri. London, 1818). Inversion caused by a neoplasma (polypus or fungus hæmatodes). Uterus separated on seventh day.

IV.—1828. Staub, Schweiz. Zeitschr, fuer Natur u. Heilkunde. Bd. iii. h. 1. Inversion caused by a large polypus; the latter was excised, the uterus ligated.

V.—1835. Bouchet of Lyon (Jacquemier, Manuel des Accouch.), tom. ii. p. 580.

VI.—(?) Gooch, *ibid.* Inversion existing for three years. Ligature cut through on fourteenth day.

VII.—1840. Harrison, London Med. Gaz., 1840, April. Uterus separated on fourteenth day.

VIII.—1836. Bloxam, *Gaz. Méd.*, 1837. Labrevoit, l. c., p. 50. The inverted uterus was supposed to be a polypus. Ligature removed on sixteenth day; every month a bloody discharge.

IX.—1837. Kuttler, *Æsterr. Jahrb.* Bd. xi, s. 3. Inversion after eleventh pregnancy; the ligated uterus separated after three days. Patient is reported to have menstruated again.

X.—1838. J. Williams, *Lancet et Gaz. Méd.*, 1839. Ligature.

XI.—1843. Esselmann, *Tenness. Soc. West. Journ. of Med. and Surg.*, 1843. Aug. Breslau l. c. Inversion of twelve years' standing, believed to be a polypus. Ligated uterus came off on eighteenth day.

XII.—1846. Greyson, *London Med. Gaz.*, 1846. Feb. 20, p. 342. Inversion after a difficult birth; ligated uterus came off on ninth day.

XIII.—1852. Betschler, *Beitr. zur Gynæk.* Bd. i. pag. ii. Inversion existing for one year. Ligature cut through on fourteenth day.

XIV.—1855. Oldham, *Guy's Hosp. Rep. Ser. iii.* 1. Inversion after difficult labor. Ligature came off on twenty-second day.

XV.—1861. Courty, Labrevoit, l. c., p. 51. The ligated uterus came off on thirtieth day.

XVI.—1863. Dale, *Gaz. Méd.*, 1863. Inversion with cancer. Ligature. Cancer recurred after two months; death.

b. Cases terminating fatally.

XVII.—1784 Lammonier, *Rec. per. de la Soc. de Méd. de Paris*, 1798. T. iv. Labrevoit, l. c., p. 52. In-

version caused by a polypus. Repeated ligations. Death after one month.

XVIII.—1816. M. A. Petetin Lyon, Journ. Gen. de Méd. T. i. vi. Pag. 128. Labrevoit, l. c., p. 52. Inversion, existing since three months; considered a polypus. Ligation. Death on fifth day.

XIX.—1824. Quoted by Boyer in his *Traité de Mal. Chir.* Inversion mistaken for a polypus. Ligature cut through on twenty-sixth day. Death ensued on thirty-eighth, in consequence of septicæmia.

XX.—1830. Symonds, London Med. Gaz., 1830. Nov. Incomplete inversion, believed to be a polypus. Tumor came off on fifteenth day; death on twenty-third day.

XXI.—1852. Deroubaix, Gaz. Méd. de Paris. 1853. 27 Août. Inversion of eight months. Ligature broke on twelfth day. Death on twenty-third day, with diphtheritic symptoms.

XXII.—1855. Coats, Assoc. Med. Journ., July, 1855. Inversion existing for half a year. Death on sixteenth day after application of ligature.

XXIII.—1860. Betschler, Beiträge zur Gynækologie. Bd. i. pag. 7. Inversion caused by a fibroid tumor. The ligature came off on twentieth day; death on twenty-fourth day.

2.—REMOVAL BY EXCISION.

a. Cases terminating successfully.

XXIV.—1839. Luytgareus, Ann. de la Soc. de Méd. de Gaud. 1839. Inversion caused by a large, broadly attached polypus. Cutting of the pedicle, ligation of

the arteries. Healed in ten days; menstruation afterwards.

XXV.—1844. Michalowsky, *Journal de la Méd. de Montpellier*, May, 1845. Inversion existing since thirteen months. Tumor cut off with scissors. Recovery in fourteen days.

b. Cases terminating unsuccessfully.

XXVI.—1678. Arnoult de la Motte, *Tr. d'accoucher*, p. 806. Death after a few days.

XXVII.—1788. Deleirye, *Labrevoit*, l. c., p. 52. Death on third day.

XXVIII.—1858. Aran, *Lect. Cliniq. sur les Mal. de l'Uterus*. Removal of inverted uterus with *écraseur*. Death in fifty-nine hours.

XXIX.—1859. McClintock, *Tr. Prat. de Mal. des Femmes*. Paris, 1855. Puerperal inversion of one year's standing. Removed with the *écraseur*; death after fifty-nine hours.

XXX.—1864. Wilson, *Edinburgh Journal*. *Labrevoit*, l. c., p. 53. Inversion caused by a polypus; removed with the *écraseur*.

XXXI.—1861. Veit, *Winkel's Path. and Therap. des Wochenb.*, p. 99. Inversion after birth, existing after birth seven months. Removed with the *écraseur*.

3. REMOVAL BY LIGATION AND EXCISION.

a.—Cases terminating successfully.

XXXII.—16—. *Vicuseium*, *Tract. de liquorib.* *Labrevoit*, l. c., p. 49. Ligation, followed by removal with the knife. Patient lived for fifteen days.

XXXIII.—1787. Desault and Bodelogue, *Rec. per*

de la Sociét. Méd. de Paris. 1791. Inversion caused by a polypus; double ligation, afterwards removed below by the knife.

XXXIV.—1802. Alex. Hunter, Hufeland's Journ., 1802, Maerz. Ligation, and after six hours, excision.

XXXV.—1804. Chevalier, Merrimann, die Regelwidrige Geburt. Deutsch von Kilian, p. 309. Ligation; after twenty days, amputation. Patient lived for several days.

XXXVI.—1806. Clarke, Edinb. Med. and Surg. Journ. 1806, t. ii. Inversion caused by and believed to be a polypus. Ligation and amputation.

XXXVII.—1811. Baxter, Annal. de Littér. Méd. Etrang. Gaud, 1811, Juillet. Inversion of five weeks. Ligation, followed by amputation. Menstruation returned twice.

XXXVIII.—1818. Windsor, Med. Chir. Transact., 1819. Puerperal inversion existing since a year and a half. Double ligation. Amputation after twelve days. Stump healed in two and a half months.

XXXIX.—1820. Roettger, Walther u. Graefe Journ., Bd. xxiii., p. 203. Inversion, after repeated removals of polypi, believed to be another polypus, by a barber, who intended removing it by pieces. Fundus cut off. Roettger placed a ligature around it to stop the hemorrhage, and cut the tumor away below. Ligature came away after three weeks. Menstruation is said to have appeared again.

XL.—1821. Weber, Siebold's Journ., bd. v. s. 2. Inversion caused by a polypus. Ligation, followed by amputation.

XLI.—1831. Laserre, *Froriep's Notiz.*, 1836, Jan., p. 116. Puerperal inversion of one and a half year's standing. Ligation; after eight days, amputation. Recovery after four weeks.

XLII.—1835. Cook, *Lancet*, 1846, Jan. 16. Puerperal inversion; ligation, followed in three weeks by amputation.

XLIII.—1836. W. Mooz, *Lancet*, 1836, vol. ii. Puerperal inversion; ligature; amputation after three weeks.

XLIV.—1840. Portal, *Filiatre Sebezio*, 1841. Feb. *Gaz. Méd.*, 1841, No. 16. Inversion of four years' standing; ligation; amputation after a few days. Recovery in twenty-nine days.

XLV.—1842. Betschler, *Beitr. zur Gynækologie*, bd. i. p. 2. Inversion caused by a broad fibroid tumor, attached to the fundus. Ligation, followed after fifteen days by removal with the knife.

XLVI.—1842. Juergeues, M. Horten, *Dissert. de Uteri Invers.*, Dorpat, 1853. Inversion caused by a polypus; ligation with silver wire; excision on fourteenth day.

XLVII.—1843. Crosse, *Archiv. Gen. de Med.*, 1848, Février. Puerperal inversion since one month; ligature; amputation after five days; recovery after four weeks.

XLVIII.—1848. Johnson, *ibidem*. Puerperal inversion of five years' standing. Ligation, followed after twenty-eight days by amputation. Patient recovered after six weeks.

XLIX.—1848. Hublier, *Bull. de l'Acad. de Méd.*, 1848, No. 41. Puerperal inversion existing for two months.

L.—1849. Higgins, *Monthly Journal*, 1855, No. 134. Puerperal inversion of twenty years. Ligation; excision with a bistoury; quick and complete recovery.

LI.—1854. Gredding, *Gaz. des Hôpitaux*, 1855, No. 134. Inversion caused by a broad fibroid tumor; ligation, followed immediately by amputation; three sutures inserted.

LII.—1859. McClintock, *Dublin Journal*, xxvii., Feb., 1859, p. 137. Puerperal inversion. Ligature remained for forty-eight hours. Removal by the écraseur in the groove formed by ligation.

LIII.—1863. Sheppard, *Med. Times*, 1863. Ligation and excision.

b. Cases terminating unsuccessfully.

LIV.—1803. Watkinson, *Journ. der Ausland. Med. Lit.*, 1803, Jan., p. 84. Ligation, followed by immediate excision. Ligature slid off the stump; fatal hemorrhage.

LV.—1836. Meerholdt, *Dissertatio de Uteri Inversione*, Dorpat, 1836. Puerperal of one year's standing. Ligation; amputation; soon signs of internal hemorrhage with consecutive peritonitis, terminating fatally on nineteenth day.

LVI.—1840. Velpeau, *Gaz. des Hôp.*, 1840, Mai, No. 36. Incomplete puerperal inversion; ligation, followed by excision. Death after seventy-two hours.

LVII.—1850. Reported by Engel in *Zeitschr. des Deutsch. Chirurg. Vereins*, bd. iv. pag. 43. Patient suffered from polypus for three years, which was ligated.

LVIII.—1867. Scanzoni. Inversion caused by an intraparietal fibroid tumor; ligation with Maisonneuve's

constrictor, followed immediately by excision with the bistoury. Death ensued on seventh day."

From this exhaustive résumé, embodying fifty-eight cases of amputation, it will be seen that eighteen terminated fatally,—nearly one-third of the entire number submitted to operation.

Taxis has been practised for the reduction of the inverted uterus, certainly since the beginning of this century and perhaps before that time, in two entirely distinct methods. First, the manipulations of the operator are directed to the constricting cervix, in order to overcome resistance there, and to return first the parts which last escaped. Second, these manipulations are directed to the body, in order to return first the parts which escaped first. The first of these methods is thus described by Capuron:* "If the orifice be not sufficiently dilated to allow the inverted portion to return easily, it is a better plan to take the tumor in the palm of the hand, with the fingers distributed around its pedicle, and to reduce first the portion which was inverted last, as if we were dealing with a hernia." "We encounter at this point," says Aran,† "two opinions which have arisen in relation to the reduction of the uterus inverted during labor: one party desiring to return first the parts which escaped last, subjecting the uterus to a general compression, so as to soften it to a certain extent and force it to pass the orifice little by little, commencing with the least voluminous parts. . . . Arrived at the tumor, if the operator wishes to employ the first method, he kneads it so as to

* *Mal des Femmes*, 2d Ed. p. 510.

† *Mal de l'utérus*, p. 901.

soften it, and cause it to pass more easily through the constricted orifice in which he engages his fingers." Becquerel* describes it thus: "It is advisable, as far as practicable, to return first the parts which last escaped; for in this way we dilate in advance the muscular fibres which oppose reduction. (P. Dubois Danyau) . . . M. Velpeau considers this the best method."

The second method of taxis consists, not in manipulating the "constricted orifice in which he engages his fingers," so as to "dilate in advance the muscular fibres which oppose reduction," as Aran and Becquerel express it; but in dimpling or indenting the fundus itself, so as to make of the indented or invaginated portion a species of wedge, which is forced into the cervical constriction. In recent cases of inversion occurring, as the vast majority of these cases do, after labor, 350 out of 400 reported by Crosse having done so, the centre of the fundus may be indented and carried up through the cervical canal; and even in chronic cases such an invagination is much more practicable than one would theoretically suppose. As a general rule, however, my impression is that the manipulations practised on the fundus act, not in this way, but in overcoming cervical resistance, and thus accomplishing in a more indirect and imperfect way what the French method, styled the method of Viardel by Becquerel, does by engagement of the fingers within, and direct expansion of, the cervical constriction.

Dr. Emil Noeggerath, of this city, has offered a modification of the second plan, which I have resorted to

* *Mal de l'utérus*, tome 2, p. 314.

with success on two occasions which will be hereafter reported, and which I regard as one of the most valuable suggestions which has been made of late years with reference to the subject. His method consists in compressing the uterine body, opposite to each horn, so as to indent one of these, and thus offer to the cervical canal a wedge, which passes up and is followed rapidly by the other horn and the whole body.

My experience in the reduction of three of my cases has been this: the first result of manipulation has been to overcome the resistance of the cervix, so that the whole of this part turned over and enfolded the body, further progress being stopped by resistance at the os internum; then one horn has gradually become indented, and thus the second part of the process of replacement has been effected.

As the first two of the cases which I here report were seen in consultation with gentlemen who have published them,* I do not feel at liberty to do otherwise than to employ their published records verbatim. After having done so, I shall merely add a few remarks suggested by my personal experience in connection with them.

“CASE I. — *Reduction of an Inverted Uterus by a New Method.* By THOS. ADDIS EMMET, M.D., Surgeon in charge of the New York State Woman's Hospital.

“The following case was presented at a meeting of the New York Obstetrical Society, November 21, 1865, and published in the *American Journal of the Medical*

* These cases are introduced by permission of the authors.

Sciences, Philadelphia, for January, 1866. It has, however, been, to a great extent, re-written, as well as the subsequent case, and additional material added.

“Mrs. Q., æt 24, came under my charge October 8th, and presented the following history: She had menstruated for the first time at eleven years of age, with no return for a year, but after this period she became regular and continued in perfect health. She was married at 22 years of age; soon afterwards became pregnant and went to full term. Labor commenced between the hours of nine and ten P.M., March 11, 1865. She was attended by a homœopathic practitioner, who was called in attendance at once and remained all night. The progress of the labor, it seems, was perfectly natural. About eleven A.M., the attendant ruptured the membranes, and delivery took place of a large male an hour afterwards, labor having continued nearly thirteen hours. As the head passed the vulva it was discovered that the umbilical cord had made several turns around the child's neck; the cord, as stated, was slipped over the head without traction, the body followed immediately, and soon afterwards the placenta. Within an hour after delivery the patient suddenly became faint, with violent after-pains coming on. This condition continued for some forty-eight hours, with a bloody discharge, which, at the time of a pain, was expelled from the vagina with considerable force. After the pains had ceased, the flow continued more than natural, and at times was almost pure blood. About a week after delivery the nurse discovered a mass presenting just

within the vagina. An examination was made by the attendant, a consultation called, and the case pronounced (as the patient states) one of cauliflower-growth. She returned home to her friends in Utica at the end of the month, still suffering from a constant sanguineous discharge. Her general health at length became so much impaired that Dr. McCall, of Utica, was consulted, and he recommended her to my care.

"She presented every indication of suffering from extreme anæmia, with a pulse of 140, and a loud cardiac murmur following any exertion. On making a vaginal examination, a soft mass, somewhat larger than an egg, was felt lying in the axis of the vagina, and, being pedunculated, might well have been mistaken for a polypus. I passed two fingers of the left hand well up into the cul-de-sac behind the mass, so as to lift the uterus above the pubes, and, with the other hand over the abdomen, I was able to approximate the two sufficiently to satisfy myself that the case was one of inversion of the uterus.

"*Oct. 9th.*—Dr. Thomas saw the case in consultation, and verified my diagnosis. It was then decided that nothing could be gained by further delay.

"*10th.*—With a pulse of 160 per minute, at 12.30 P.M. she was placed under the influence of ether by my assistant, Dr. Perry. As it was a serious question if, in her reduced condition, the anæsthetic could be continued long enough to effect the reduction, I requested Drs. Thomas, Sabine, and Geo. T. Elliot, Jr., to aid me with their counsel. After a few moments she was fully under the influence of the anæsthetic; the pulse became

fuller and reduced in frequency. The patient, lying on a table, of a convenient height for me to operate while seated, was placed on the back, with her knees drawn up. The left hand was passed entirely within the vagina, and by pressure of the fingers the fundus was dimpled, while the organ was steadied by the right hand over the abdomen. At the end of an hour I found that but little progress had been made beyond the fact that the fundus was somewhat smaller, in consequence of the impaired circulation from pressure. As there was full time for reflection, it became evident to me that the mode of reduction recommended by pressure made at the fundus was not applicable when the uterus had already contracted to nearly its natural size. As the fundus was indented by pressure, the body spread laterally beyond the cervix, and, although it materially dilated the neck by flattening it, the power was lost, without influencing to any extent the point of constriction. In fact, it seemed to increase the difficulty with a continued force in the upward direction, by rolling in the parts at the point of inversion. With this view, I allowed the fundus to drop into the palm of my hand, and passing the thumb and fingers around the mass, as high up as possible within the cervix (as shown by the diagram), I continued to enlarge the space between the neck and inverted body, by rapidly expanding the fingers as much as possible. At the same time I made steady upward pressure, with a view of returning first the portion last involved. This manœuvre was aided by lifting the organ above the pubes, and endeavoring with the other hand to roll out

the inverted portion by sliding the abdominal wall over the point with some pressure. In the course of half an hour the progress of the reduction was marked. The globular mass, which was felt through the abdominal parietes in the beginning, now gradually became oval laterally, with a marked depression in the centre. By this time my hand had become almost powerless, and I was obliged to call on Dr. Elliot to relieve me for a few moments. I then continued the manipulation for some three-quarters of an hour longer, when Dr. Thomas, who had been absent during the past hour, returned. From his appreciation of the progress made, the only fear I entertained of final success was in the patient's power of endurance. Gradually the fundus passed entirely within the cervix, but beyond this point, for an hour longer, but little advance was made in the reduction. The depression, however, felt through the abdominal walls, above the seat of inversion, had become large enough apparently to admit the extremities of three fingers, with a proportionate increase in the size of the mass. During the whole time the patient had been kept profoundly etherized by Dr. Perry. This was found necessary from the fact that in the beginning, when its influence was lessened to any degree, vomiting came on immediately, and with any movement of the patient it was impossible to steady the uterus or maintain the necessary amount of pressure. Her pulse had continued good throughout, and her general appearance was satisfactory. Shortly before four o'clock she began to fail; at about ten minutes after that hour her condition had become critical, and I was obliged to abandon

my efforts for the time being, in consequence of the powerless condition of my hands. In consultation the opinion was unanimous, that it would jeopardize the life of the patient to continue the etherization longer. In this opinion Dr. Echeverria, who was present, concurred. At my request a last effort was made, for I was satisfied that I could not be deceived in the fact that the depression, felt through the abdomen, was slowly becoming larger. Drs. Sabine and Elliot, after a few moments, desisted from their efforts, as the latter gentleman had advised a frequent change, so that the hand of each operator having rested, the power exerted would be maintained in a more uniform manner. Dr. Thomas, in turn, also passed his hand into the vagina, and, as he describes it, drew down the mass so as to reproduce the inversion, and on immediately returning it, found that it did so beyond its previous position; he repeated this manœuvre, and on returning it again, on the point of his finger (without force on his part, as he stated), the fundus passed on and the reduction was completed, after an effort of three hours and fifty-five minutes.

“This point is one of great clinical interest, and worthy of discussion by the Society, as to the bearing of this manœuvre on the result, as well as the exact point at which it should be resorted to. My own impression is, that Dr. Thomas is mistaken as to the extent of reduction made by him. The portion below the constriction was flaccid and could be readily drawn down, but above the engaging point, where the surfaces were forced into such close proximity, it is a question whether more force

would not have been required to reproduce the condition existing at the beginning, than it was possible to have exerted. The final effort, doubtless, hastened the issue, yet as the widest portion of the uterus was already so far advanced within the canal, it is possible that the muscular action of the organ itself might at this stage have soon completed the reduction, as, from the result, the canal was evidently already dilated sufficiently for the purpose. We see the principle demonstrated in an india-rubber ball which has been indented; as soon as the action of recovery has once commenced, the progress of restitution rapidly increases to the consummation.

“She speedily recovered her consciousness after the ether, and during the vomiting following, as a precaution, I passed the index-finger directly into the relaxed canal of the uterus, which was presenting immediately within the labia. It was fortunate that I did so, for on the instant I felt a portion of the posterior wall near the fundus indented. With the other hand on the abdomen, I seized the organ and restored the portion on the point of my finger, and retained it in the canal until the paroxysm had passed. It was the only effort at vomiting, and there was no return.

“At 5 P.M., with a pulse of 130, twenty-five drops of Magendie’s solution of morphia was administered with beef-tea by the mouth. At 9 P.M., pulse 128, as she was suffering from pain generally over the abdomen, thirty drops of Magendie’s solution was repeated. She was sleeping quietly at 10.30 P.M.; pulse 112 per

minute. At midnight the pulse was 108, and she had been sleeping since the last visit.

"11th.—At 9 A.M. the pulse was 110; she was free from pain, and had passed a quiet night. As there was some tenderness on pressure over the abdomen, a large poultice was ordered. At noon her condition was comfortable; pulse 120, with some increase of tenderness over the abdomen; ordered the morphia to be repeated. Half-past two P.M., was free from pain, and sleeping quietly; pulse 105. At 7 o'clock P.M. pulse the same; repeated the morphia.

"12th.—Nine A.M., pulse 100; she was entirely free from pain, and had passed a very comfortable night. From this time she was kept quiet in bed for twelve days without any further treatment being necessary.

"16th.—I made a digital examination and found the os patulous, but the uterine canal contracted above the vaginal junction so as to admit the point of the index finger only for a short distance. The sound passed a little over three inches readily to the fundus, with the organ somewhat anteverted.

"Nov. 28th.—She visited me after taking a long drive. I found that the uterus had returned nearly to its normal size. She had menstruated naturally a few days before, and was rapidly regaining her health and flesh.*

"On presenting the case to the Obstetrical Society, it was the opinion of several members that the condition of the patient at the point in question favored a rapid reduction in the last stage, and as the dilatation was com-

* Nov. 2d, 1866.—Her husband called on me to state that she was in excellent health, and now five months advanced in pregnancy.

plete, the innate force of the organ itself might have soon completed the reduction. Dr. Budd remarked that Dr. Noeggerath had some years ago succeeded in reducing an inverted uterus by a similar process, and that the case was published in the "Transactions of the Academy of Medicine." Dr. Noeggerath, being called on, related the case in full, and remarked that in recent cases, and where the fundus had not yet escaped from the cervix, the dimpling process recommended would sometimes succeed, but not always where the inversion was complete. He also gave the particulars of a subsequent case, where he succeeded only by confining his manipulations entirely to the return of one side alone, until the reduction was complete."

I have no disposition to dispute the conclusion, so clearly set forth in this narrative, that my manipulations were of little avail in accomplishing the success which was finally obtained; and while dissenting from the deduction, that "the innate force of the organ itself might have soon completed the reduction," willingly agree, that any other hand which might have been at that moment in the vagina would have done what accident allotted to mine. Nevertheless it may interest the reader for me to state precisely the process by which reduction occurred, in so far as I am able to trust to my remembrance of the occasion. The hand of the operator had been repeatedly changed during the time allotted to the effort at reduction, and each had taken his turn without success. The case appeared so hopelessly rebellious that a last trial was being made by each in turn, preparatory

to the abandonment of the process at that sitting, and I was the last to make the attempt. Taking the fundus in my fingers, I drew it down outside of the vulva, and rapidly pushed it up to the highest point possible in the pelvis. This reinversion of the partially replaced uterus is always very easy, for the reason that there is, unfortunately, no influence at work to prevent it. I have done it in three other cases, have known it done by others, and regard it as a method always to be essayed.

In the fourth case recorded in this essay, I succeeded by it in returning one horn of the uterus to its position

As I rapidly pushed the uterus up, in Dr. Emmet's case, to the highest point in the pelvis which was attainable, I thought that it was just about to go into position, but was disappointed. Drawing it down again, I then repeated the manœuvre, when it instantly erected itself.

"CASE II.—A case of reduction of a completely inverted uterus, of four years' standing, by means of pressure and a peculiar mode of manipulation. By JOSEPH WORSTER, M.D., of New York city.—Extracted from the American Jour. of the Med. Sciences, for October, 1867.

"Inversion of the uterus is happily of such rare occurrence that many accoucheurs, long in extensive practice, have never met with a single case. It is always an alarming event at the moment, and often speedily fatal. If the first danger be escaped, and the uterus be not speedily returned, this becomes exceedingly difficult, and the inversion is very often a source of distress which embitters or shortens life.

"This displacement has been mistaken for a polypus, or, when due examination has not been made, has remained undiscovered even until after death. In some cases the uterus has spontaneously returned, after the lapse of a considerable time, to its natural condition, and women have afterwards conceived and borne children. (Meigs' *Colombat.*) But such a result is not to be calculated on.

"A few cases are on record in which the inverted uterus has been returned after a period of twelve weeks, but then with exceeding difficulty. Drs. Emmet and Thomas, in this city, succeeded in returning one after a lapse of seven months, by a peculiar kind of manipulation. (See number of this journal for January, 1866, p. 149, and April, 1866, p. 403.)

"In the case which I am about to relate, this manipulation was also successfully adopted; which, as a new and important means of success, when practised with patience, perseverance, and endurance, both on the part of the physician and patient, and after an unusual period of duration of the inversion, merits to be put upon record, and encourages to future effort in cases hitherto deemed nearly or quite hopeless.

"Mrs. S. J. S., daughter of a physician, consulted me in reference to an inverted uterus; doubtful whether it could be returned or required to be amputated. She was of nervous temperament, well developed, twenty-seven years of age; had been married at the age of twenty-one, and became pregnant thirty days afterwards, and had resided in Wayne Co., N. Y.

"In due time, after a labor of nine hours' duration, she

was naturally delivered, but was speedily attacked with a profuse hemorrhage which induced syncope, depending, no doubt, upon a partial inversion of the womb. After an interval of constipation of nine days, an evacuation of the bowels rendered the inversion complete.

"The inversion was not discovered for a week, and was then mistaken for a polypus. Hemorrhage more or less had occurred during the period, *nearly four years*, which had elapsed previous to her coming under my care. Believing the return of the organ to its natural position to be impossible, and worn out by the suffering and hopelessness of her condition, she had resolved upon submitting to the amputation of the inverted uterus, and had repaired to this city for the purpose of having that operation performed. But, reflecting on the success of a previous case of chronic inversion treated by manipulation, on the danger of amputation, and influenced by the consideration that her naturally fine voice (she was an eminent vocalist) would suffer from the loss of her ovaries, even if the amputation succeeded, I decided to attempt its reduction by means of the hand, aided by the relaxing anæsthetic influences of chloroform.

"Before, however, resorting to this method, I determined to remove all additional sources of pain and irritation which might impede success, and proceeded to heal several superficial ragged ulcerations and abrasions which were patent upon the everted interior surface of the uterus, which organ was much enlarged and protruding between the labia.

"*Nov. 3, 1866, 11 A.M.*—Assisted by my son, Dr. W.

P. Worster, who administered the chloroform, I attempted the reduction manually. I introduced my well-greased left hand into the vagina and grasped the fundus uteri with the fingers, endeavoring, as much as possible, to lessen its lateral diameter. Thus grasping it between the thumb and fingers, I made strong pressure upwards in the proper axis, wedging it between the sides of the os and neck, which soon began to descend and surround the inverted fundus. At the same time I made, from above and behind the pubis, strong counter-pressure with the thumb and fingers of the right hand through the parietes of the abdomen, downwards into the centre of the depressed fundus and cervix uteri, which soon began to yield. The second finger of the right hand, most successfully operating as a wedge, dilated the cervix until the finger in the centre of its circular ring met the thumb of the left hand within the vagina; using the thumb, at times, to reinvert the cornu, after the manner of Noeggerath, and resorting occasionally to the method with which Dr. Sims, in a more recent case, had been successful in a few minutes.

“This manipulation we continued for thirty minutes, when it was desisted from. The patient had lost much blood, and was much exhausted by the long continuance of an amount of pressure, which only those who have had a similar experience would suppose the uterus capable of enduring. The tenderness of the uterus and abdomen subsided in a few days, but not for some days longer was the manipulation repeated, in order again to effect the cicatrization of the renewed ulcerations,

which ~~again~~ kindly healed under the nitrate of silver and a dressing of cotton saturated with glycerine.

"8th, 11 A.M.—I ~~resumed~~ the operation with increased confidence in the certainty and ease with which the damages inflicted would be repaired; the everted inner surface of the uterine cavity being smooth and healthy.

"The patient lying upon her back, the limbs drawn up, and under the full influence of chloroform, I again seized the protruded fundus with the two fingers of the left hand, and thumb thrust into the right cornu, and by long and strong compression so diminished its size that I could carry it up much further than before, and found that little had been lost by the delay. The bulk of the uterus within the embrace of the fingers had retained its position, and was much diminished, and could be now easily pushed beyond the grasp of the surrounding cervical ring. I also succeeded in more depressing the cervix, through the abdominal walls, and effecting a wider divergence of the encircling cervical border on all sides; a space about two inches in diameter.

"The pressure was continued in both directions this time for one hour and five minutes, when physical exhaustion, both on my part and that of the patient, warned me to desist. The parts were secured against further protrusion by Barnes' dilator in the vagina, and a respite of a few hours given to repair damages.

"At 10 P.M. the operation was resumed. The tampon had afforded an excellent support to the protruding fundus. From time to time I adopted a suggestion of Prof. Thomas', which, in Dr. Emmet's case, had seemed advantageous, of drawing down the uterus as

far as possible and then carrying it suddenly upwards to pass it through the os and cervix, but unsuccessfully. In adopting again, further, the suggestion of Dr. Noeggerath, to crowd the thumb into one cornu, it passed through into the fallopian tube, a circumstance which occasioned me no little alarm as to future consequences; considerable hemorrhage followed, and I desisted for the present. At this time the os was so far dilated that I could pass two fingers of the right hand downwards from behind the pubis, and through it, until they met the thumb of the left hand carrying up the cornu from below.

"9th.—No serious consequences have followed the violent pressure of the preceding night. Pulse quiet, and patient comparatively comfortable; hop poultices to abdomen, and cold water injections. Subsequent applications of the sol. nit. argenti again kindly healed the breaches made, and after a few days she returned home to await the passing over of her menstrual period, and the recruiting of her energies for a further struggle. In order to avoid prolixity I shall pass over the details of the repetition of the several manipulations for a reduction upon her return, made upon the 28th and 29th of November, and the 8th and 9th of January, 1867.

"Jan. 11, 1867.—Patient was placed in the usual position, and, under full anæsthetic influence, the usual manipulations were again resorted to. With the assistance of Prof. Thomas and Dr. James L. Little, who, on this occasion, administered the chloroform, a pressure from below upwards of about twenty pounds was maintained per vaginam, and a corresponding counter-pressure from

above downwards through the abdominal cavity upon the encircling edges of the cervix. The handle of an egg-beater was also resorted to occasionally to relieve the weary and aching forefinger. We took alternate periods of making the pressure, relieving each other at intervals of forty-five minutes; and thus we combined and continued our efforts for *three hours*, until the resistance of both cervix and uterus was overcome, and our fatigue and anxiety were abundantly rewarded with a triumphant success. This fell to the lot of my friend, Prof. Thomas, who, just as the period of his forty-five minutes had about expired, being the end of the fourth alternation, was fortunate enough to complete or effect the reduction with the points of the fingers, to the great satisfaction of all parties concerned.

"The case, for the length of duration and obstinacy of the inversion, and the severity of the effort needed for its reduction, is, perhaps, without a parallel in obstetrical history.

"Its sequel is briefly told. The operation had lasted within a few minutes of three hours, and naturally had much exhausted the patient. Cotton saturated with glycerine was introduced into the vagina, and muriate of morphia, gr. ss, given.

"*Jan.* 12.—In good condition; pulse quiet; a little inclined to nausea; abdominal walls and uterus tender; hop poultices to abdomen.

"14*th.*—Tenderness much diminished.

"15*th.*—Applied solid nitrate of silver with Lallemand's porte-caustique; also at other times solution of nitrate of silver within the cervical canal.

"16th.—Tenderness nearly gone. Retroversion, which had existed for a few days past, is removed, and position of the uterus now normal. The patient, desirous of returning home, left on the 20th (tenth day after the operation) for Newburgh, travelling without inconvenience in the horizontal posture, and well satisfied with the result of her visit to New York.

"The points in connection with this interesting case upon which I desire to dwell most strongly are: 1st, the necessity of long, steady, and continued perseverance upon the part of the operator, *to fatigue the encircling cervix*, and cause its relaxation from around the protruding uterus, which is similarly affected and very much aided by, 2d, the counter-pressure from above downwards through the abdominal walls, with the points of the fingers of the right hand kneading and compressing it, and, perhaps, dilating it mechanically.

"Except by this combination of forces, carried to the uttermost extent of fatigue on the part of the operator and patient which nature is capable of enduring, success is not, I think, in cases of long standing, to be attained. But with it much may be expected. It is not original, but it is novel, and merits a faithful trial in all cases.

"I will only further observe, that whereas this young wife came here to submit to a dangerous operation, which, even if successful, would have forever disqualified her for child-bearing, she returned to her home with a perfectly normal condition of her sexual organs, a healthy uterus, and a complete aptitude for conception."

At the moment of reduction in this case, the fibres of the cervix having yielded as far as those of the os internum, which still offered a resisting stricture, I was pressing the thumb upon one horn and the index-finger upon the other, after Noeggerath's method. While doing this, I was conversing with the gentlemen who were with me, when, suddenly, my thumb sunk into an indentation. Supposing this to be due to penetration of the uterine tissue, I was about to withdraw my hand and report the accident to Dr. Worster, when, to my surprise, I found upon slight increase of pressure that the indentation increased. I now perceived that the horn had receded, and in a minute or two more the whole uterus rose into its place.

One point upon which Dr. Worster does not, in his essay, lay that stress which I think it deserves, is this: at the commencement of the attempt I proposed making counter-pressure, not by the fingers, but by a conical plug of boxwood, with a handle a foot long, which I carried for the purpose. This plug was not introduced through the vagina, but was used thus: the hand in the vagina lifted the cervix against the abdominal walls, so that the cervical ring could be felt through them, and the plug was then pressed into the ring by pushing before it the abdominal walls. During Dr. Worster's efforts I held this plug forcibly in the cervical ring, and during my efforts he did the same for me. It may have had no influence in dilating the constricted cervical canal, but it is worthy of attention as a rational attempt to accomplish that result. To my mind, and to that of Dr. Little, it appeared that its effect was evidently good.

CASE III.—On Thursday, 10th of June, 1869, I was requested by Drs. Bishop and Sawyer to see with them Mrs. C., an Irishwoman, aged 28 years, and mother of one child, ten months old.

The patient had been in perfectly good health up to her labor, ten months before the time of our visit. This labor was tedious, and was followed by a considerable degree of flooding, which enfeebled her greatly, and prolonged the time of her convalescence. She left her bed at the end of a month, and supposed herself for a time to be well. Very soon, however, bloody, watery, and purulent discharges occurred; she suffered greatly from prostration, and had much pelvic pain upon exertion or sudden movement. As she was nursing her child she did not menstruate, and thus escaped much of the sanguineous loss to which most such cases are exposed. On account of the symptoms detailed, she saw her physician several times, but getting no better, sent for Dr. Bishop about one month before I saw her. Dr. Bishop requested Dr. Marvin S. Buttle to see the patient with him, and it is to the latter gentleman that belongs the credit of the diagnosis.

When I saw Mrs. C. she was pale and thin, her pulse over 100 and weak, her appetite poor, and her spirits depressed. Physical exploration revealed the uterus in complete state of inversion, the neck firmly contracted, and the body not remarkably sensitive. Being anxious to try a plan of preparation by which I hoped that relaxation of the cervical stricture might be accomplished by therapeutic means, I proposed to delay manipulation until Sunday the 13th, at 2 P.M. This

was assented to, and I at once put the patient upon the free use of belladonna, and directed that a stream of water should be thrown, as warm as she could bear it, against and over the inverted uterus, three times a day, for half an hour. Suppositories of one grain of the extract of belladonna were placed in the rectum thrice daily, which rapidly produced the poisonous effect of the drug, as evidenced by constriction and dryness of the fauces, and dimness of vision.

On Sunday, 13th of June, at 2 P.M., this preparatory course having been followed for three days, I met the following gentlemen at the house of the patient: Drs. Bishop, Sawyer, Butties, Randall, and Walker. Dr. Walker having anæsthetized her with ether, she was placed upon her back on a table, and the knees were flexed and held by two physicians, seated one on each side of her. Oiling my right hand, I then passed it into the vagina, and grasping the tumor so that the fingers surrounded the pedicle, I pushed it steadily upwards against the abdominal wall, where it met the counter-pressure of my left hand. In exactly ten minutes the entire cervix yielded and the body went up, so that its lower margin was on a level with the lips of the os externum. Then seizing the body with my thumb on one horn and my index-finger pressing the other, I tried Noeggerath's method. In seven minutes one horn, that pressed by the thumb, became indented, in eight minutes the other followed it, and in just twenty-five minutes the whole operation was completed.

I feel very sure that the entire reduction could have been effected, in this case, in fifteen minutes; but the

rapid yielding of the cervix giving to my hand a band which was really the os externum, I became very doubtful as to whether I had not ruptured the whole vaginal attachment. This doubt delayed me longer than one not familiar with the peculiarly paralyzing effect of the compressing power of the vagina would suppose. My fears were fortunately unfounded, no portion of the vagina was injured, and the patient recovered rapidly and completely.

I proposed employing an abdominal plug for making counter-pressure and overcoming cervical constriction in this case as I had done in Dr. Worster's, but the parts yielded so rapidly that I found no such resort necessary.

The results of the case delighted me, and I flattered myself that in the ordinary means for relaxing cervical constriction in obstetric practice, I had found a therapeutic measure which would prevent recourse to dangerous and prolonged manipulations in inversion, and perhaps even abolish the necessity of the operation of amputation. The perusal of case fourth will inform the reader how baseless were my sanguine expectations :

CASE IV.—On the same night upon which I received Dr. Bishop's note requesting a consultation in the case just narrated, I received a letter from Mr. B. of Louisville, Kentucky, detailing the following facts :

He stated that his wife, aged 23 years, a native of Indiana, had enjoyed good health until 21 months before that date. At that time she bore a child, and since then she had been an invalid.

Subsequent to this, menorrhagia of most profuse character had occurred at each menstrual period, and for its relief she had sought medical aid. The physician who was consulted prescribed astringents and hæmostatics, but did not explore the vagina for the cause of the difficulty. Eight months after her labor she fortunately applied to Prof. Henry Miller, of Louisville, the accomplished author of "*Miller's Principles and Practice of Obstetrics.*" This gentleman at once recognized the nature of the difficulty, and proceeded to apply the proper remedy. On five occasions he anæsthetized the patient with chloroform, and employed taxis for an hour and a half. Each effort thus made was followed by the systematic employment of pressure by means of the vaginal air pessary. All his efforts were of no avail. The patient became exhausted and discouraged, and leaving Louisville, sought the aid of Prof. Theophilus Parvin, then residing in Indianapolis.

Prof. Parvin made five determined and prolonged attempts, each one lasting from four to six hours, the patient during their continuance being under the influence of ether, and each being systematically followed by the air pessary. All these efforts resulted in failure, and the patient, exhausted and almost desperate, returned to her home in Kentucky. Here she met with Dr. W. M. Allen, who advised her to make still another trial, and, in accordance with his counsel, she came to me about the last of August.

Upon Mrs. B.'s arrival in the city I was away, but saw her on the 1st of September. When Mr. B. had written to me, asking for a frank statement as to what

hope I could hold out, my reply was, that after Profs. Miller and Parvin had failed I was inclined to promise nothing. My mind, however, was so possessed by the idea that belladonna, the warm douche, and the abdominal plug, by which I had twice succeeded, once in a rebellious case, and once very rapidly in a simple one, would succeed in this, that I urged him at least to let me make an effort.

I found Mrs. B. to be a delicate, fragile blonde, weighing about ninety pounds, very pale and exsanguinated from profuse menorrhagia, which had occurred at intervals for 21 months, and much disheartened by the failure of her eminent medical advisers.

The patient was rapidly brought under the full influence of belladonna, administered by rectal suppository, and the warm douche was employed three times daily, for an hour each time. At the end of a week she was anæsthetized with ether, placed upon the back upon a table, and, aided by Drs. Nott, Metcalfe, and Walker, I proceeded to make my first attempt at reduction by taxis. For one hour I tried faithfully all the varieties of taxis to which allusion has been made in this paper, and made counter-pressure by the abdominal plug, but all to no purpose. The cervix expanded nearly up to the os internum, but no further would it yield.

Filling the vagina with a caoutchouc bag, and distending this with very warm water, she was now put into bed. On the next day, at the same hour, exactly the same procedure was gone through with, Dr. Sabine replacing Dr. Metcalfe in the consultation, on account of the indisposition of the latter gentleman. The re-

sult was the same, and at the conclusion of the attempt the bag was replaced, filled with warm water, and on the next day the third trial was made.

At the end of the hour no advance was obtained, and I now began to share in the opinion of Dr. Miller, that adhesions existed within the sac, and that no amount of taxis would ever reduce the displaced fundus.

For cases in which reduction has been so far effected that the fundus can be pushed up to a level with the external os, Dr. Emmet has advised and practised a method which appears to me to be most excellent. It consists in closure of the os externum by silver sutures, so that the fundus, imprisoned in the cavity of the neck, tends to dilate the constriction near the os internum. At a subsequent period the stitches are removed and taxis is practised again. I should have resorted to this plan here, but the fundus was never sufficiently high to admit of its retention in this way. Dr. Emmet's method will be found described at length in the *Amer. Jour. of the Med. Sciences* for January, 1868.

On the next day we met again, in the case of Mrs. B. Being desirous of giving the patient the advantage of every resource which would save her from a dangerous capital operation, I went to the consultation prepared to offer two suggestions: the first was that I should pass a delicate tenotome through the fundus, carry it up through the cervical canal, and incise its four sides so as to cut through the constriction existing there, and due to the fibres near the os internum; the second was, that I should draw the uterus outside

the body and cut downward through the mucous membrane. The patient having been anæsthetized, I manipulated as usual, except that I employed greater force, for twenty minutes. At the end of this time, no progress being observed, we consulted upon my propositions, and, with the acquiescence of my colleagues, I pushed the uterus up as far as it would go, then, fixing by my finger the point of constriction, I drew it down, and cut down through the tissue of the neck, the incision first involving the mucous membrane and extending down toward the subjacent peritonæum, as recommended by Aran.*

No sooner was the knife withdrawn than a free jet of blood was projected from an artery which appeared nearly equal in size to the radial. This jet was not per saltum, but steady, as it is often seen to be from small arteries located in dense fibrous tissue. I presume that I cut the circular artery of the neck, which had become increased in size by the displacement of the uterus. For a half hour we strove to ligate this. Upwards of a dozen ligatures were one after another applied, but the vessel had retracted into the brittle tissue of the uterus, and could not be tied. Dr. Walker went for the actual cautery, but before his return the flow was checked by Dr. Nott's passing a suture through both lips of the wound, and bringing them forcibly together. Of course all efforts at taxis were at an end, for the present; nor did I think it wise or warrantable again to renew them; for fourteen efforts had now been made without any promise of success.

* *Mal de l'utérus*, p. 906.

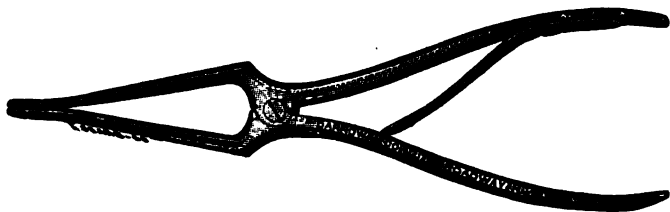
The case then presented itself in the following aspect. Here was a patient whose exsanguinated condition and tendency to profuse hemorrhages demanded relief from an evil that would soon destroy her life, which on more than one occasion had been in danger from excessive flooding. Taxis had been tried fourteen times, some efforts lasting from five to six hours, and only one less than an hour. The constriction which resisted reduction had been cut at infinite risk, and all had failed. The only recognized operation which now offered itself was amputation, and at the thought of this the patient revolted.

Under these circumstances I proposed an operation which throughout the progress of the case I had kept in reserve, and which, two years before it, I had fully elaborated in my mind. It was, that I should make an incision two inches in length through the abdominal walls and peritonæum, just over the cervical ring; pass into this ring a steel dilator, made on the principle of a glove-stretcher; stretch the constriction; and return the uterus to its place. The propriety of the operation being concurred in by my colleagues, and by my partner Dr. Metcalfe, it was explained to Mr. B., and all its important bearings made clear to the patient herself, of whom I had seen enough to know that her unflinching courage was equal to any trial which promised release from the unfortunate state which for nearly two years had embittered her life and destroyed her usefulness.

After ligation of the circular artery, the mucous membrane of the uterus sloughed extensively and the

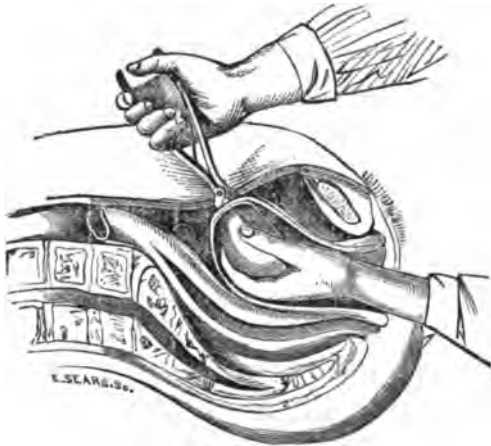
patient appeared much exhausted. In a week from this time, however, she was in a fit condition for the operation proposed, and it was appointed to take place on the 16th of September.

The instrument represented below was promptly and artistically executed for me by Messrs. Darrow & Co., of No. 1217 Broadway, and I obtained a small anal speculum, and a dilator for stricture of the rectum, to be employed, should sufficient dilatation not be accomplished by the instrument which is here shown.



On the 16th Sept. the operation was performed in presence of Drs. R. P. Howard, of Montreal; Hutchison, of Brooklyn; S. W. Francis, of Newport; and Nott, Sabine, Metcalfe, Markoe, G. T. Elliot, Noeggerath, Jas. L. Brown, and Walker, of New York. The patient having been put under the influence of ether, Dr. Metcalfe introduced his hand into the vagina, and lifted the uterus so that I could detect the cervical ring against the abdominal wall. I then slowly cut down upon the median line, as for an exploratory incision in ovariectomy, and leaving the wound exposed to the air until all oozing had ceased, cut into the peritonæum. I then inserted my finger into the uterine sac, and found no adhesion whatever to exist. Replacing Dr.

Metcalfe's hand by my left hand, I now inserted the steel dilator, and, in the manner represented in the subjoined figure, dilated the stricture.



The dilatation was exceedingly easy and rapid, but I found that as I withdrew the dilator, the tissue of the organ would at once contract. After dilating the stricture fully, I partially returned the uterus, after some effort, in the same manner in which reduction was accomplished in Dr. Emmet's case. Drawing it down to the vulva, I rapidly pushed it up, and was gratified at finding that it was nearly replaced. Drawing it down again, this time outside of the body, to my dismay, I discovered that the artery, cut one week before, was spouting freely. I now saw that success must be attained at once, or that it would elude my grasp when just within it. Actuated by this feeling, I rapidly returned the organ, and was delighted to find one horn rise into place. But the additional force employed was a little more than the vagina could bear, and one fin-

ger passed through between the uterus and bladder. One horn was still inverted. Passing the dilator into this, I stretched it open, and instantly the uterus resumed its normal position.

The time of the operation was noted by Dr. Samuel W. Francis as follows: patient under ether, 1 hour and 2 minutes; time occupied in opening peritonæum, 17 minutes; time occupied in returning uterus, 27 minutes.

After this the patient rallied rapidly, and her delight at learning that the obstinate inversion had been really overcome unquestionably acted as a stimulant to recovery.

The abdominal wound was closed by four silver sutures, involving the peritonæum, and dressed with cold water. The vaginal rent was not interfered with.

On the next day the artery, which had already given so much trouble, began to give forth blood so freely into the vagina and through the vaginal rent into the peritonæum, that I thought the hemorrhage would end fatally. The pulse ran up to 160 to the minute, the face and extremities became cold, and so imminent did the danger of exhaustion appear to me that all preparations were made for transfusion.

Before resorting to this measure, I tried to check the flow by elevating the foot of the bed two feet, so as to throw the whole aortic column of blood back upon the heart, and applied a bag filled with tannin against the os uteri. These measures happily succeeded, and hemorrhage ceased entirely.

Subsequent to this period, the patient recovered without a single unfavorable sign; the peritoneal edge of

the abdominal wound healed by first intention, and on the eighth day after the operation she left her bed for her lounge.

This operation was by no means perfect. The instruments which I employed for dilatation were, I found too late, inefficient, and means for keeping open the constriction, after removal of the dilator, were entirely wanting. I feel very sure that were I to essay it again, which I should not hesitate to do *in a case which had resisted all minor means, as taxis, vaginal pressure, &c.*, and for which no resource but amputation remained, I should succeed more rapidly, easily, and with less risk to my patient.

In reading the description of such an operation as this, the first idea which is likely to take possession of the mind is that of its being a very bold procedure. This I think is an error. Explorative incisions for ovariectomy prove that the dread which was formerly entertained about opening the peritonæum was much greater than it should be. And if the reader will bear in mind the statistics already given, which prove that $\frac{1}{3}$ or $\frac{1}{4}$ of all operations for amputation of the inverted uterus end fatally, even while essaying, not cure, but palliation of symptoms at the cost of the uterus itself, he must admit that there are good grounds for questioning this conclusion, arrived at without mature reflection.

For the credit of the operation, imperfect as it was, the following facts must be borne in mind by the reader. The difficulties which attended it were none of them inherent to it, but depended upon want of experience as to its various requirements. The patient was

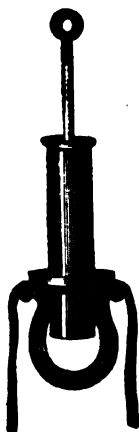
subjected to it in a state of great exhaustion from other operations. The evils which followed it, and well-nigh frustrated its results, were due, not to it, but to section of the neck, performed a week before. So far as the operation itself was concerned, the patient recovered without an untoward symptom.

Before concluding my remarks I will venture some advice, based upon the experience recorded in this essay, as to the course which should be pursued in an ordinary case of inversion, and then offer a few suggestions for any one who, in a rebellious case, may be disposed to try the operation which I have described.

In a case presenting itself for the first time for treatment, I should use belladonna and the warm douche for a week, so as to relax the uterine tissue as far as possible, and then for another week employ pressure by means of a caoutchouc bag filled with air or water. After this I should employ taxis, for a period not exceeding one or two hours, once, or at most twice a week, in the mean time keeping up vaginal pressure by the caoutchouc bag, or, if the fundus were returned within the os, by closure of this after Emmet's method.

Having failed with these measures, *and not before*, I should resort to abdominal section, modifying the operation which I performed in the following manner. Instead of employing a dilator of two limbs, I should employ one of four; and instead of dilating by the hand applied to the handles, I should distend the instrument by screws. Having distended its four limbs, I should keep the instrument in place for twenty-five or thirty minutes, so as to wear out the tendency to contract before any

efforts at reduction were made. Even then, before removing the dilator, I should introduce between its limbs something which would exert a counter-pressure against the hand placed in the vagina. For this purpose I would suggest a hard rubber cylinder $1\frac{1}{4}$ inches in diameter, similar to that shown below, which has a piston passing through its centre, and a shoulder or ridge encircling it. This ridge would answer for making counter-pressure; the walls of the cylinder would prevent closure of the cervical canal by contraction of its tissue; and the vacuum created within the inverted uterus, by retraction of the piston, would aid in reducing the body, when pressure is made upon it by the hand in the vagina. The shoulder might be made quite wide, so as to rest on the edges of the abdominal wound, while the extremity of the cylinder passed within the abdomen; or it might be made narrower, so as to pass into the abdomen, and rest on the edges of the cervix, as shown in the diagram.



Cylinder, with piston within it, and shoulder around it, passed down into an inverted uterus.

THE TREATMENT OF ENDOMETRITIS BY UTERINE
INJECTIONS.

BY J. C. NOTT, M.D.,
New York.

It is generally conceded that uterine leucorrhœa is often benefited by the use of medicated injections into the cavity of the uterus, but the profession has been deterred from this procedure by the alarming symptoms which have not unfrequently followed. The object of this communication is to show that this objection may be overcome by a properly constructed instrument, and that uterine injections are our safest and most reliable local remedies.

The pathology of endometritis is by no means well settled, and I will make a few passing remarks on it, not with the view of adding any new facts, but simply for the purpose of fixing the attention of the reader on the group of symptoms I propose to treat. The term *endometritis* I use as a conventional and representative one, without assuming that it is inflammation; that it is engorgement, passive or active; that it is irritability (as understood by Gooch and Hodge); or that it is any other morbid entity which I do not comprehend.

Cases of this class are rarely fatal, and therefore want the light of *post-mortem* examinations; but even if we had all the light that the knife and microscope could give, so little do we know of the true nature of those morbid phenomena which have been grouped under the general term *inflammation*, we would pro-

bably make little progress in settling pathological disputes.

All admit that acute inflammation of the uterus, except as a sequel of parturition, or mechanical injury of some kind, is exceedingly rare, but opinions differ greatly when we come to the chronic forms of uterine disease. One school of pathologists speak of simple ulceration of the cervix uteri as of very common occurrence; another regard it as rare. Many practitioners admit the frequency of inflammation of the cervical canal, both acute and chronic, while they almost wholly ignore the occurrence of corporeal endometritis, or corporeal metritis. I shall not enter into these disputes, but will only ask attention to a condition of the organ represented by certain symptoms that are familiar to every practitioner of experience. I will, however, first allude to another point.

Hypertrophy of an organ is not necessarily an event of inflammation, or connected with it in any way, and in no organ is this fact better exemplified than in the uterus. Hypertrophy of its cervix may go to an enormous extent—tenfold, or more—without any evidence of inflammatory action. The majority of the cases of so-called *procentia* are of this character. If the uterus in this condition be properly examined, the cervix (as a rule) will be found greatly elongated and protruding beyond the vulva, while the fundus is at its normal height and the body of normal size—facts which have been very fully and aptly demonstrated by Professor Isaac E. Taylor, of this city.

Here we have an example of *simple* hypertrophy, or

proliferation of tissues, presenting a structure differing little from the normal tissues of the healthy uterus, and almost identical with fibroid deposits in the walls of the organ, which are, in like manner, independent of inflammatory action. Here we have very striking organic changes that are not inflammatory, but which may greatly disturb the functions of the organ, and lead to much local and constitutional disturbance.

Let us advance a step farther in uterine pathology, and say a few words about uterine leucorrhœa. Here we have to be guided mainly by symptoms, as we know little of the morbid action on which they depend. We do know, however, that there must often be some serious molecular derangement of structure of the uterus in these cases, as not only is there change of bulk, change in position, and deranged function in the organ itself, but implication of the whole system.

We are frequently called to treat cases in which a great morbid change has taken place in a part or the whole of the lining membrane of the uterus; the Nabothian follicles of the cervix, the utricular follicles of the body, pour out abundant altered secretions, mucous or muco-purulent, and frequently tinged with blood. The epithelium is rapidly cast off; the surface is often left in a denuded granular condition, from exposure and hypertrophy of the villi; the discharge becomes irritating to the vagina and vulva. This condition, in its various grades, has been described under the names uterine leucorrhœa, uterine catarrh, and endometritis; the latter term meaning inflammation of the lining membrane. Now it is clear, I think, that some

of the forms are not allied to inflammation, and the affection should be divided into at least two groups, viz., *idiopathic* and *symptomatic* uterine catarrh.

Dr. Gantillon* well remarks: "Without doubt, leucorrhœa is often the symptom of some organic lesion of the womb or its appendages; but in the greater number of cases uterine catarrh is the whole affection; it is a flux from the genital parts which cannot be attributed to any persistent lesion of the tissues, and which seems to be dependent on the generally debilitated state of the economy.

"It is thus we account for idiopathic uterine catarrh in girls and young women who present all the characters of a lymphatic temperament.

"Women of a delicate constitution, with white skin and light hair, are particularly inclined to this flux, resulting from the great impressionability of their mucous membranes. The same persons are very subject to coryza. The most trifling accident causes a considerable increase in the normal secretions of their mucous membranes. We may mention among the accidental causes to which we allude, damp, cold, sudden change of temperature, moral influences of all kinds, etc., etc." To which he might have added, excessive fatigue.

In the lower classes this affection is brought on by bad air, bad food, fatiguing or sedentary occupations; while in the upper classes by indolence, irregular hours, want of exercise, air, etc. Such patients usually have dry skin, are constipated, anæmic, dyspeptic, with

* Uterine Catarrh, &c. By H. E. Gantillon, M.D. Baillière & Co., 1863.

menstrual derangement. This form of uterine leucorrhœa is only one of the local manifestations of a weakly or broken-down constitution.

This form of disease in the great majority of cases belongs to the young, requires little local treatment, and is generally cured by systematic exercise in the open air, tonics, shower-baths, sea-bathing, nourishing diet, etc.

The above form of uterine leucorrhœa (idiopathic) rarely requires to be treated with intra-uterine remedies, though the treatment is often assisted by cold water and astringent vaginal injections.

We come now to a still higher grade of uterine affection, which has perhaps been more properly designated endometritis. Here we have a positive *local* disease, and one which not only deranges the structure and functions of the uterus itself, but which gravely implicates the whole economy. It has been divided into *corporeal* and *cervical* endometritis, and we are told that it is common for each form to run a distinct course, even in its most chronic form.

I confess that I have rarely been able to establish such sharp dividing lines, and have not often met with cervical endometritis of long standing without more or less implication of the body of the organ; as evinced by engorgement, increased sensibility to the finger and sound, displacement, deranged menstruation, uterine leucorrhœa, etc. *All* of these symptoms may not be present in each case, but enough usually are to indicate some morbid change in the body. Still more rare has it been, in my experience, to see corporeal endometritis, attended by the usual leucorrhœal discharge,

where the epithelium was not swept from the cervical canal and os uteri. Even the vagina and vulva rarely escape some degree of irritation. So much for *endometritis*—now a word or two about *parenchymatous metritis*. So long as the disease is confined to the lining membrane, no appreciable change will be discoverable in the walls of the organ; but in what proportion of the cases of *chronic endometritis* (and this is the form in which we almost always meet it) do we find the parenchyma untouched? According to my observation, it is rare to see long-continued leucorrhœa from the body of the organ, without symptoms of the so-called metritis; such, for example, as increased weight and depth of the body—increased sensibility to the sound internally and to the finger externally—flexions—deranged menstruation. In cases following abortion or parturition, where there is subinvolution, the organ is found much increased in size and weight; while in others, where there is mechanical obstruction to the discharges, the body may become simply dilated, and thin as a bladder. In either case, where there is retróflexion, the lower wall becomes engorged and morbidly sensitive to the touch; the nervous system and general health become deeply compromised.

All agree that *cervical endometritis* is the most common form of disease, the most amenable to treatment, and for very obvious reasons. The cervix has no very important function to perform. It may be cut, burned, or even amputated with comparative impunity. It may be brought into view and remedies applied where we see disease, and with a proper understanding of what

we are doing. On the symptoms and treatment of cervical endometritis I have nothing to add to the excellent résumé of Dr. T. G. Thomas, in his work on the diseases of females, which I esteem as the best hand-book in our language.

It is to what Dr. Thomas calls *chronic-corporeal-endometritis* that I wish especially to call attention. Dr. Henry Bennet and his followers regard this as a very rare form of disease, while his antagonist Dr. West and his school tell us it is common. This diversity of opinion arises mainly from our inability to define what inflammation is. What Gooch and Hodge call "irritable uterus," others look upon as inflamed uterus. Dr. Bennet regards endometritis of the body, when it does occur, as an extension of disease upward from the cervix, and gives as a prominent sign of this extension, *a dilated state of the internal os*. This is an important remark, and I shall have occasion again to allude to it.

Causes.—I have already spoken of *idiopathic* uterine leucorrhœa as belonging more particularly to young women of lymphatic temperament. This idiopathic form may and does, however, occur not unfrequently in women originally of good constitution who have been broken down in health from any causes. Women of lax fibre, when they marry and bear children, are almost certain to become the victims of troublesome leucorrhœa and displacement of the uterus.

The cases, however, of uterine leucorrhœa which I have been most frequently called on to treat are those of married women whose health has suffered from the effects of labors or abortions, and more particularly

those who have got up too soon after the event, and thus prevented the proper involution of the uterus. The more feeble the constitution, the more likely are these morbid sequelæ to result. The most troublesome of all, usually, are those cases complicated with retroflexion of the uterus, this organ being engorged from its pendent position, and the fundus made a receptacle for accumulated secretions. The uterus cannot drain itself, and is often forced to throw its contents off by uterine pains, or colics. These retained, foul secretions become a constant source of local and constitutional disturbance.

As an evidence of the unreliability of the methods of treatment heretofore employed, and of the necessity of some innovation on the established routine practice, I give the following quotation from the work of Dr. Thomas:

“Prognosis.—The prognosis of chronic inflammation of the uterine body is always grave with reference to cure. Even if the case is not of very serious character, and has lasted only a short time, the possibility of rapid recovery is doubtful, while, if it has continued for a number of years, it will often prove incurable. Scanzoni says, with a candor which does him honor: ‘As for ourselves, we do not remember a single case where we have been able to cure an abundant uterine leucorrhœa of several years’ standing.’”

If equal candor were exercised by the profession at large, in this country and Europe, I fear we should have little fault to find with the frankness of Drs. Thomas and Scanzoni. I may be permitted to add, that I came

to take up my residence in this city some eighteen months ago, pretty well posted in the current literature of uterine diseases, and having had a respectable amount of experience in their treatment, though far less than falls to the lot of distinguished specialists in metropolitan cities. Since that time I have omitted no opportunity of informing myself of the teachings of leading gynecologists of New York. I have visited frequently the hospitals and dispensaries where such diseases are treated. I have attended regularly the meetings of the Obstetrical Society, where the best talent and largest experience are brought into collision on the pathology and treatment of diseases of females. I have been favored with the intimacy of many of the leading gentlemen in this department, and while I am proud to bear witness to the rapid strides they have made in the wide field of gynecology, I have settled down upon the conclusion, that in what has been called chronic corporeal endometritis, or uterine leucorrhœa, the profession are agreed upon no reliable plan of local treatment. In the work of Dr. Thomas will be found not only the results of his own large experience, but a fair *résumé*, as far as I can learn, of the practice generally adopted in this city.

All agree that little can be done by local treatment alone, and that every effort should be made to improve the general tone of the system. I know of no better advice on this point than is found in the work of Dr. Thomas. I would merely remark, that too much exclusive privilege has, I think, been granted to the uterus. There is no reason why it should enjoy an immunity not allowed to other organs. If the lungs, the liver,

the stomach, the kidneys, the eye, or other organ is chronically affected, we insist upon exercise, air, tonics, nourishment, &c. Patients of this class lose mental and physical energy to an extent that makes an effort of any kind difficult. Unless in very extreme cases, exercise should be insisted on. If there is displacement of the uterus, metrorrhagia, or other contra indication, these must be properly cared for.

The hydropathic school has taught me much on this point. I have seen them take delicate, broken-down women who were afraid of the slightest exposure, rouse them at daylight in winter, put them in sitz-baths, and then pack their bellies with wet towels, and make them walk in the open air before breakfast. This, too, I have seen done without the slightest regard to the menstrual flow, and these women, that could not walk around a block of buildings, in a little while would walk two, three, or four miles, and improve on it. During the late war, too, many of our women, in their anxiety to serve the soldiers, forgot their ills, and got well under constant exercise.

Dr. Hodge has given us, in his work on females, much excellent advice touching irritable uterus, the use of pessaries, exercise, &c.

Application of Alteratives.—These form a prominent part of the present routine treatment of uterine leucorrhœa, and are arranged by Dr. Thomas under the following heads:

“They are applied—1st. By the use of solutions painted over the surface. 2d. By ointments left to

melt in utero. 3d. By solid caustics. 4th. By injection of fluids into the cavity of the uterus."

The first step in the intra-uterine treatment is to see that the cervical canal is sufficiently open to allow the easy introduction of remedies, and the free exit of secretions and fluids of any kind. If necessary, sponge-tents must be used to dilate the channel, but, as already remarked, an open cervix is one of the usual attendants of uterine leucorrhœa.

Dr. Marion Sims has played an important part in the intra-uterine medication, and to him especially Dr. Thomas gives the credit of teaching us the most convenient method of application. Dr. Thomas gives, clearly and in detail, the method of procedure. A probe properly wrapped with cotton-wool, and dipped into such solutions as the following, is introduced directly to the fundus, and kept there from thirty seconds to a minute:

Chromic acid.....3i to water ʒi.

Nit. argent.....3ss to " ʒi.

Churchill's iodine.....ʒss to glycerine ʒi.

Saturated solut. sulph. cupri.

Chloride zinc.....3i to glycerine ʒi.

After these applications, the doctor tells us the patient should go to bed, and remain perfectly quiet for three or four days. He regards this as a rather serious operation, but does not specify the dangers, which, however, are familiar to all gynecologists.

Dr. Sims, Dr. Emmet, and others, are in the habit of applying chromic acid much stronger, even equal parts;

and this I have often seen done without any disagreeable consequences. It is true that the uterus in different subjects differs greatly in its sensibility, but I think the heavy mucous or muco-purulent covering of the organ often protects it from the violent action of the chromic acid. Could the lining membrane always be wiped clean before the application of the acid, we doubtless should more often see the violent symptoms occur to which Dr. Thomas alludes. Certain it is that very violent symptoms do occur occasionally, after chromic acid or nitrate of silver, both in the uterus and appendages. And no one can tell beforehand what will follow.

Iodine is a much milder application, and even Churchill's solution may be applied to the vagina without acting as a severe irritant.

Application of Solid Caustic to the Cavity of the Uterus.—Under this head Dr. Thomas says: "The only caustic which is ever thus employed is the nitrate of silver; for although one author has advised a similar use of *potassa cum calce*, no one of whom I have heard has followed his counsel. *The use even of lunar caustic gives such great pain, and causes such grave constitutional symptoms, that it can never become a popular therapeutical resource.* It is, however, of great value in obstinate cases, and should always be held in reserve. Sometimes the severest uterine colic is produced by it, with nausea, vomiting, and great prostration. So violent have these symptoms been in some cases, that I have been forced to use the hypodermic syringe freely for their relief, and now often employ it before resorting to the

method. . . . The patient should be warned of the pain she will be likely to suffer, and the practitioner remain with her, or visit her within an hour after the application has been made, prepared to give relief by the hypodermic syringe."

I have thus given a brief outline of Dr. Thomas' *résumé* of the generally received practice of New York in uterine leucorrhœa. There are, I believe, some practitioners who do not follow closely the lead of Dr. Sims, but they are exceptions.

We have from Dr. Thomas a frank confession of the violent symptoms often following these powerful remedies. I have myself witnessed them with fear and trembling in my own practice in times past, and every candid practitioner will tell the same story.

Injections of the Uterine Cavity.—This method of treatment is passed over very lightly by Dr. Thomas, who seems to think it so hazardous, that he fears to take the responsibility of recommending it. He says: "There can be no question of the fact, that it may be used a great many times without injurious results, but it is ordinarily attended by great danger; and no one, not even he who has the largest experience, can tell when a fatal issue may result from it. The fluid thrown into the uterus is liable to pass through the fallopian tubes into the peritoneal cavity, and produce the most alarming collapse, peritonitis, and death. The literature of the subject contains a number of cases in which death has thus resulted. It has been found, however, that if the cervical canal be dilated by tents, so as to allow the escape of fluids from the cavity of the body,

these dangers disappear to a great degree, and by anticipating the injections by such means, we may cautiously avail ourselves of them. The substances which may be used are persulphate of iron, tincture of iodine, weak solutions of nitrate of silver, sulphate of zinc, sulphate of copper, &c. A long-necked syringe, charged with the substance to be used, should be passed into the cervix through the os internum, and the fluid very slowly and gently expelled ; or a small syringe may be fitted by its nozzle into a gum-elastic catheter, the extremity of which is passed into the uterine cavity, and the fluid slowly discharged."

I give this quotation as one expressing the ideas of the profession generally on this point.

Dr. Thomas tells us, "there can be no question of the fact that by this means endometritis may be cured," and is only deterred by its dangers, which "disappear to a great degree," "if the cervical canal be dilated by tents."

Now my object is to show that this danger can be avoided by the use of a properly constructed instrument, and by feeling the way with very mild, soothing washes, and gradually educating the organ up to any point of toleration we desire. Others use strong applications at long intervals and in very small quantities as alteratives, whereas I would use every day, if possible, more copious, mild, detergent washes. The cavity should be frequently cleansed with anodynes, with mucilages, with astringents, with disinfectants, alteratives, &c. : in short, the endometritis should be treated upon the same principles that we would a vaginitis, a suppura-

ting pleural cavity which had been opened to let out pus, or any other diseased cavity pouring out unhealthy secretions.

That injections, even of the mildest kind, thrown forcibly into the cavity of the uterus, when the cervical canal was not sufficiently pervious to allow the free regurgitation of the fluid, have produced all the violent symptoms to which the Doctor alludes, is true; but the *rationale* of this action has not yet been satisfactorily made out. The uterus at different times, and in different subjects, presents various grades of sensibility; in some cases the mildest applications, and in small quantities, produce violent symptoms and bad after consequences. In each case, therefore, we should feel our way, to determine its degree of toleration. Idiosyncrasy would seem to have much to do with the effects of applications.

We are not justified, in the present state of knowledge, in asserting that fluid injected into the uterus will, unless in very rare cases, pass through the fallopian tubes. Collapse and even death have followed such injections; but these symptoms, coming on, as they often do, instantly, cannot be explained by the contact of the injected fluid with the peritoneal cavity. The peritonæum has no sensibility until time enough has elapsed for it to inflame, and in its normal state may be cut, burned with nitric acid or a hot iron, without producing any symptoms similar to those above alluded to.

Nor have we any actual dissections to prove that fluids injected into the uterus of a living woman, unless in very exceptional cases, can be forced through the

uterus and fallopian tubes into the cavity of the abdomen. It may be done in the dead subject. Dr. Gantillon, of Paris, made experiments on living animals, but always failed to force fluids through these tubes.

Some authors have attempted to explain the violent symptoms produced by the supposition that the fluid, instead of passing into the fallopian tubes, entered the veins, and assert that both the injection and air have been found in the veins. Scanzoni thinks the symptoms are produced by the sudden distention of the uterus. But none of these explanations are satisfactory. A morbid irritability of the uterus appears to have more to do with the symptoms than anything else, as would seem from the violent symptoms often following the caustic probe.

The body of the uterus in many cases possesses extreme sensibility and powerful sympathies, and should be tampered with "soberly, wisely, and discreetly."

Contraction, and even closure of the os uteri, pelvic peritonitis and cellulitis, ovaritis, and deranged menstruation, are by no means rare consequences of intra-uterine medication by caustics, and of cutting operations; and the benefits are often so equivocal, that I, for one, have become much more timid in resorting to these procedures than formerly.

That caustics are often thus used with impunity, we all know; that some cases improve *after their use*, is equally true; but my conviction is, that the improvement in the majority of cases is attributable more to the vaginal injections and attention to the general health than to the caustics.

In my opinion, this practice of cauterizing the interior of the body of the uterus has been justified on false analogies. We are told that pure nitric acid is used to destroy hemorrhoids; true, and often with great benefit, often without any, and not unfrequently with injury; to all of which I can testify from my own experience. Remember, too, that the nitric acid in these cases is applied with great caution to parts in full view; it is allowed to touch only the diseased spot, care being taken *not to implicate the sound tissues*, which are relied upon to repair the injury done by the acid. No surgeon would think of thrusting a wad of cotton dipped into strong nitric acid, or chromic acid, or solid nitrate of silver, into the rectum, and holding it there for a minute, at the risk of injuring the whole of the lining membrane.

In the use of chromic acid and similar applications to the uterus, Dr. Thomas exercises extreme caution, telling us that "not one superfluous drop should be allowed to saturate the cotton." He says, in another place, that "three of the most violent cases (of vaginitis) with which I have ever met were caused by contact of a solution of chromic acid with the vaginal walls, in making an application to the uterus."

Now I must add that I do not think the facts above detailed, nor any which I know on record, would lead us to believe that the body of the uterus, with its acknowledged sensibility in its morbid states, its important functions, and its wide-spread sympathies, can be subjected with much more impunity to the action of chromic acid and other caustics than the vagina—a

cavity that is often lacerated, contused, subjected to sloughing; which may be cut, stitched, burnt with hot iron, &c., without serious consequences to the neighboring parts or the constitution.

Other analogies are adduced to justify this caustic practice. We are told caustics are applied to the tonsils, to ulcers of mucous membrane anywhere; but here, as in the case of hemorrhoids, it is always done with proper regard for surrounding tissues. The tonsils, too, may be amputated with as much impunity as a wart. Sulphate of copper is applied to granular eyelids, sometimes with benefit, more often without; and I have seen eyes again and again seriously injured by its application. The eye, perhaps, in certain morbid conditions, more than any other organ, resembles an "irritable uterus," and, like an irritable uterus, will not tolerate the touch of a probe, or the application of a few drops of the aqueous solution of opium, to say nothing of heroic remedies.

Now it will be said, in answer to all this, that no prudent practitioner will apply chromic acid and other similar remedies to a uterus in this sensitive condition; but I know there are practitioners who are constantly doing it, and they should be made sensible of the great risk they run of doing irreparable injury. It is particularly for the rash and inexperienced I now write.

The neck of the uterus, which has no vital function to perform, may, when not inflamed, be cut, burnt, or amputated with impunity; it may even be eaten off by a corroding ulcer, with very little pain or constitutional disturbance in many cases.

But how stands the case with the *body* of the uterus? Although it has in some cases been extirpated without evil consequences, no one can deny its important functions, and its controlling influence over the general health in its morbid conditions, and its great sensibility to manipulations or irritating remedies.

Pelvic peritonitis and cellulitis, ovaritis, cystitis, &c., are frequent consequences of injudicious tampering with the uterus.

Strong caustics applied to the body of the uterus may, doubtless, destroy many of the utricular follicles, derange the menstrual functions, and even risk closure of the fallopian tubes.

If we had any means by which we could fully bring into view the interior of the uterus; could ascertain where disease *is*, and where it *is not*, so that we could apply caustics to granular or otherwise diseased spots; and could circumscribe their action to the *diseased points alone*, it is easy to believe that great good might be done here, as elsewhere; but I must be pardoned for expressing a doubt as to the propriety of entering such an organ as the uterus hap-hazard, and applying all over the surface solid nitrate of silver, concentrated solutions of chromic acid, chloride of zinc, &c. To my mind it is not in accordance with sound surgical principles.

These caustic applications are often very daintily and inefficiently applied, and this is the reason why they do not more often do harm. A probe coated with nitrate of silver, or an armed applicator dipped into chromic acid, is passed into the cervix or body, where it very

often comes in contact with a surface smeared with tenacious mucous discharge. The consequence is that it does not touch the naked lining membrane, and therefore produces little sensation or effect of any kind. Very different is the effect if the surface be first well cleansed, so as to get the caustic fairly upon the morbid surface.

I come now to speak more in detail of the only local treatment in which I have faith, and which, if properly managed, is free from danger, and I think capable of doing much good. I allude to uterine injections—not strong, but mild, anodyne, detergent, astringent, or alterative washes, according to the indications of the case.*

The objections made to the use of uterine injections have arisen entirely, I think—1st. In the want of a proper instrument for injecting the body of the uterus. 2d. From the use of articles too irritating to suit the condition of the organ.

The first point to be attained is to be sure that the cervical canal is sufficiently open to allow any fluid thrown into the cavity to regurgitate along the outside of the tube of the syringe used as fast as it enters, so as to prevent distention of the organ; and this object has not been fully attained by any apparatus I know of heretofore contrived.

Two methods have been suggested to secure a proper outlet for fluids—1st. An instrument, constructed like

* In the February number, 1869, of this Journal will be found a very interesting "Historical Review of Uterine Injections."

the double catheter, for washing out the bladder, with an eye in each tube near the end, so that the fluid will run out of one tube as fast as it passes in through the other.

2d. Dilatation of the cervix uteri by sponge-tents, and the use of a simple syringe with a long slender tube; or by the attachment of a gum catheter.

To the first instrument it may be objected, that the cavity of the uterus must be *filled* before the fluid can find its way through the return tube. From the position of the eye, pellets of blood, of mucus, or of tough matter will gravitate to the lower part of the organ, and not be washed out, the eye might become blocked up, and all the dangers of forced distention follow.

The objections to the sponge-tents are, that if they alone are relied upon, and a simple syringe be used, they are troublesome and unreliable; the tent must be reapplied every few days, and the cervical canal, particularly the os internum, may unexpectedly contract around the pipe of the syringe, and bring on all the dangers we fear.

To meet the dangers and difficulties of uterine injections, I have had constructed by F. A. Stohlmann, Esq., of the firm of George Tiemann & Co., a uterine catheter, which in my hands has fully answered expectations. I give below cuts of this and several other instruments which I have found useful, and for which I am in like manner indebted to the ingenuity of Mr. Stohlmann.

Fig. 1 and Fig. 2 represent two catheters, one for the male bladder, and the other for the uterus. Both

are constructed on the same principle, and differ only in length and curve.

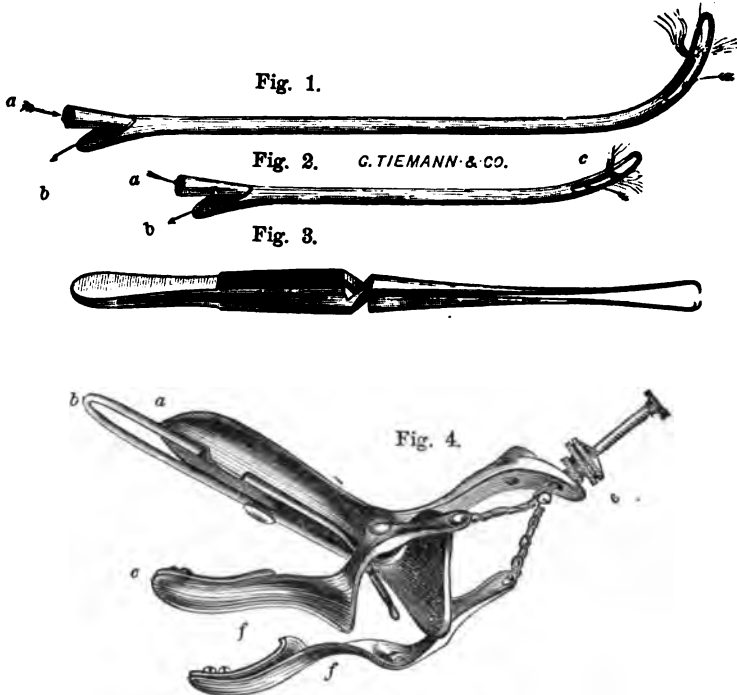


Fig. 2 is the one for injecting the uterus, and is about nine inches long. It consists of a large silver catheter, with an eye an inch long, and as wide as the size of the instrument will permit, on each side. A small tube, not more than one-fifth the calibre of the catheter, runs along the concave wall of the latter, and terminates about the middle of the eye. When water is forced by a syringe into the tube at *a*, it escapes through the other end of the small tube at *c*, into the cavity of the womb or bladder, and, falling at once

into the eyes, rushes out through the large catheter at opening *b*. The small arrows point the direction which the fluid travels. It is impossible that any distending force can be exerted on the uterus, however rapidly or forcibly the fluid may be thrown in.

Fig. 1 is an instrument on the same principle, suggested by Mr. Stohlmann, and I think must prove particularly valuable to the lithotritist, for washing out fragments of stone, &c.

No. 3 is a very delicate double spring, or forceps tenaculum, which I have found very useful in catching, holding, and drawing the os uteri into the position we desire. It gives no pain, and when once fixed holds on, and may be left lying loose in the vagina, to be pulled upon as necessity demands.

Fig. 4 represents my speculum, on which an improvement has been made since it was published in the *American Journal of Medical Sciences*. The mechanism is the same now as then, with the simple addition of an arrangement by which the blades can be lengthened or shortened to suit any depth of vagina. *a* is the large blade, or duck-bill, to which is attached a loop of strong steel wire, as seen at *b*, which may be slid forward or backwards, according to the depth of the vagina. This acts as a depressor on the posterior wall of the vagina, but is rarely required except in large, fat women. *f, f* are the two feet or small blades, which rest on the rami of the pubes when the instrument is introduced. At the extremities of the feet, at *c, c*, are fixed on the inner surface small steel plates, which may be pushed out to increase their length.

d is a screw attached by chains to the heel of each foot, and the instrument is expanded by screwing down the tap *e*, which elevates the screw and draws the chains after it. The patient is placed on her back, with the feet well drawn up. With the aid of a depressor, the anterior wall of the vagina is pushed out of the way and the os uteri brought into view; a single tenaculum, or the double-spring tenaculum, is then fixed in the anterior lip, and the organ is drawn forward, placed and held in the position we desire. The uterus is easily drawn within an inch or inch and a half of the vulva (as with Sims' speculum), and the operator is thus enabled to perform any manipulation he desires on the uterus. This speculum is not applicable to vesico-vaginal fistula, for which nothing can equal the lever of Sims.

The reader may object that such a catheter cannot be easily introduced. Admitting the objection, it is perhaps its greatest merit, as no uterus should be injected whose cervix is not sufficiently pervious to allow of its easy introduction. If, however, any difficulty exists, the canal should be opened by sponge-tents or the knife, and when once opened, it is easily kept open by the use of the instrument. The introduction of a sound or instrument of this kind, to a practised hand, is usually very easy, without the assistance of a speculum. Where there is difficulty, the speculum of Sims may be used if you have an assistant, or mine (which I have had to answer well) without an assistant. In using my speculum, the patient may be placed on any bed, opposite a window, instead of a table, as is required for the

use of the speculum of Sims. I always place the patient on the back, which is less constrained than the semi-prone position, and the injected fluid is more easily caught in a proper vessel.

When the speculum is introduced, seize the anterior lip of the uterus with a tenaculum; pull upon it gently so as to draw the organ down and straighten its channel, and the instrument will easily glide into the cavity.

The reader will bear in mind that my experience so far in the use of this instrument and mode of treatment extends only to one class of cases. Time may suggest other uses.

The uterus has been treated too much as a thing apart, in its physiological and pathological relations, and as not amenable to the same therapeutic laws which govern other organs. It has been cut too much, and burnt too much, as the sober second thought of the profession is now coming to believe, and we must return to sounder principles of practice.

Probably one of the best analogies I can adduce to make myself clearly understood will be found in empyema. When pus has accumulated in the pleural cavity, the surgeon makes an opening in the most pendent position (whether the case be one of idiopathic or of traumatic pleurisy), in order to drain out the offending matter; and he does not then, for the purpose of bringing about a more healthy action of the diseased surface, thrust into the cavity a probe armed with chromic acid, or solid nitrate of silver, and rub it blindly over the surface. He adopts a much more rational course; he keeps a tent in the wound to insure drain-

age, and washes out the cavity daily with tepid water, with disinfectants, mild astringents, and alteratives; and in this way gradually cures the disease, without any shock or risk to the constitution. I have had many opportunities of treating such cases, particularly traumatic ones from gunshot or other wounds, and have had many to recover well under this treatment who must have died without it. The cases of uterine leucorrhœa should be treated on the same principles, and to illustrate the details more fully, I will here give an abstract of one of my cases, which may be regarded as a typical one. I was called to her in January, 1869.

Mrs. W., aged about 40; mother of seven children, the last of which was born four years ago. Her constitution had always been rather frail, but she was not conscious of any uterine trouble until after her last confinement. She has had persistent and often copious leucorrhœa, with pains in back and pelvis, irregularity of menstruation, and menorrhagia, dyspepsia, want of appetite, nervous derangement, &c., and troublesome laryngeal cough. She had been unable to take exercise, and for three years had been much confined to her room, and the greater part of the time in a recumbent position. She had been treated by several physicians, who had probed, applied iodine and other preparations, which seemed always to aggravate her symptoms, and often would produce an attack of acute metritis, from which she suffered for weeks at a time.

On examining her I found the uterus enlarged and retroflexed, $4\frac{1}{2}$ inches in depth, excessively tender to the touch externally, and sensitive to the probe, of which

she had a horror, from the remembrance of what she had suffered. She had tried pessaries, but never could wear them. The uterus was quite low; the cervical canal very open, and by catching the body of the uterus between the two hands and pressing it, the leucorrhœal discharge gushed out. She had also great irritability of bladder.

She was so feeble, bloodless, and emaciated that it was evident little could be done with the case unless more vitality could be given to the system. She had no appetite, and I began by insisting on her taking milk with a little brandy; a little sulphite of soda was given *pro re nata*, to correct indigestion, and pills of iron and quinine.

I commenced the local treatment by placing her on her back, introducing my speculum very gently, inserting 4 inches into the uterus my injecting tube, and throwing in a little tepid water to test the organ. This gave no discomfort, and I added a little morphine to the warm water, and washed out the cavity of uterus freely, the fluid making its exit easily through the instrument. The next day I added ten drops of pure carbolic acid to six ounces of water, and washed the uterus out with this, producing no discomfort. This treatment was continued regularly every day for six weeks, when the leucorrhœal discharge was materially diminished, the uterus less sensitive to the touch, and the general health improving. I next, not only for the purpose of supporting the uterus, so as to enable her to commence exercise, but with the view of holding up the fundus, and thus enabling the organ to drain off both its leu-

corrhœal contents and venous congestion, which were much aggravated by the pendent position of the organ, introduced Hodges' closed pessary, which was then well borne, and by increasing gradually the size, and curve at the back part, I soon succeeded in placing the organ in a comfortable position, to the great relief of both bladder and rectum, as well as the back.

The treatment was steadily kept up, the injections were resorted to every day or two, and alternated with a dilute solution of iodine, about one part of the compound tincture to ten or twelve of water. At the end of eight weeks she commenced walking out. The uterus was no longer sensitive to the sound or finger, the leucorrhœal discharge was greatly reduced, the menorrhagia ceased, she had menstruated properly. The depth of the organ was reduced from $4\frac{1}{2}$ inches to within a fraction of $3\frac{1}{2}$ at the end of four months, and she was walking about the city with ease, and left for the country in a very improved condition. I know of no other treatment from which the same satisfactory results would have been attained in the same length of time.

This lady was one of the worst subjects I could have had to deal with. Her constitution had always been frail; she was much shattered by chronic uterine disease, laryngeal cough, &c.; and although a robust constitution in her cannot be created, she has the prospect of years of comparative comfort.

The treatment I here recommend for uterine leucorrhœa is new even to me, and my experience with it as yet is limited. One should be very cautious how he attempts to establish a principle on a few facts. The class

of cases to which I refer are very chronic, are accompaniments of broken-down constitutions, their treatment necessarily tedious, and it requires much time to test fairly any treatment that may be brought before the profession. The case I have given above, which came into my hands but six months ago, was my first. I have several others now under the same plan of treatment, and so far I have seen enough to encourage me to go on. I bring the matter, perhaps prematurely, before the profession, with the hope that others will give it some reflection, and adopt or reject as it deserves.

One of the most serious objections that can be made to the plan of treatment I propose, is the amount of time and trouble necessary to carry it out properly. The uterus should, if possible, be washed out every day. No physician with much practice has time to do this, unless in a hospital, or where the patients are made to come to his office at fixed hours. In the case of Mrs. W., who had an intelligent nurse, and in whom the uterus was very low and patulous, I had no difficulty in teaching the nurse to introduce my speculum, and through it to introduce the uterine tube, which enabled her, when I happened to be absent, to wash out the uterus. In suitable cases, and with properly constructed instruments, every gynecologist with much practice might have a trained female nurse that could follow out with safety his instructions. The mere thing of bringing the os uteri into view, of introducing gently a properly constructed tube into the uterus, and of washing it out with a syringe, is a simple manipulation, that any one of common sense can learn. The treat-

ment, of course, should be fairly inaugurated by the physician, to see that all is right, and should be scrupulously supervised.

Postscript.—In the August number (1869) of the American Journal of Obstetrics was published an article by Dr. Joseph Kammerer, of this city, which I did not have the good fortune to see before mine was ready for the press. This article has afforded me much pleasure and instruction, and although the experience of the Doctor has led him to different conclusions from myself on several points, I am much gratified to see that he agrees with me fully as to the utility and safety of uterine injections, properly administered.

In the way of a short postscript, I will take the liberty of calling attention to a few points of his paper. The Doctor says:—

“No pessary should be applied before the fundus uteri can be brought sufficiently forward to be felt distinctly in contact with the abdominal walls. The most appropriate for this class of cases are Hodge’s and Scatergood’s pessaries.”

According to my observation, there are cases in which the uterus can never be brought so far forward, in consequence of adhesions; and yet pessaries afford much relief. By commencing with small ones, and gradually increasing the size and posterior curvature, they are, as Dr. Hodge remarks, a powerful means of gradual reduction of the retroflexed uterus.

Again he remarks: “Strictures of the inner orifice are of frequent occurrence, and I cannot confirm the ob-

servation of those who assert that in cases of catarrh of the mucous membrane of the body, the internal orifice is always found widely open; such, in my experience, being the exception."

Here I unfortunately differ again from the Doctor, and am inclined to think the difference of opinion arises from our different methods of probing the uterus. He uses a cylindrical speculum for the purpose, which, though a valuable instrument for many purposes, is not the best here. This speculum pushes the uterus upwards, increases thereby any flexure that may exist, and so disturbs the axis of the organ as to render the passage of a sound difficult. If, on the other hand, the speculum of Sims be used, and the os uteri be seized and drawn down with a tenaculum, so as to straighten the channel, few cases will be encountered, where there is leucorrhœal discharge from the body of the uterus, in which an ordinary sound cannot easily be passed.

Again: "Avoid all intra-uterine treatment while there is any irritation or inflammation of the peri-uterine tissues, or in the cavity of the body."

This is a very important rule, and one too often and too heedlessly violated; yet even here I have found much benefit from washing out the unhealthy secretion from the uterus with tepid water or mucilages, medicated with anodynes.

Dr. K. prefers dilating sounds to tents, and in this I fully agree, as a general rule. He uses a series of four sizes, upon the same principle that we use bougies in strictures of the urethra. I effect the same object by a different instrument, viz., a pair of forceps, which when

closed present the exact shape of the Doctor's sound of the smallest size. The dilatation is done by expanding the forceps to any extent we please, and the dilatation may be gradual, or sudden and forcible, as we please. For the internal os, where the tissues are less firm, I prefer the sudden dilatation, as in stricture of urethra or fissure of the anus.

Many words have been wasted, I think, on the dangers of dilating the cervix uteri. Sponge-tents, rapid abortions, Barnes' dilator, all act in the same way; and no one fears the effects of any of these, except perhaps the sponge, which is a putrefying, irritating material. Dilatation of the internal os I think always preferable to cutting. The dangers of dilatation, whether gradual or sudden, are attributable to an inflamed or morbidly sensitive condition of the organ, and it is often important to allay irritation before the use of tents.

Even when the cervix has been dilated by tents, Dr. K., speaking of intra-uterine remedies, urges great caution, and says: "The uterine canal must be fully dilated previous to each application, and if a concentrated solution be applied, it is preferable to do so with a brush; for the introduction of these concentrated substances, notwithstanding the full dilatation of the canal, is followed immediately by energetic uterine contractions, and if too great a quantity has been injected, the liquid imprisoned within the uterine cavity produces intense colic and other unwelcome symptoms. In some instances the tube of the syringe is so firmly held by the internal orifice that not a drop of liquid can return

alongside of it, and a certain amount of force is necessary to withdraw the syringe from the uterine canal. Various means have been resorted to for avoiding this undesirable occurrence. Peculiar syringes and double canulæ have been invented with the intention of preventing the injection of too large a quantity of liquid, or to facilitate its outflow. They are, to say the least, unnecessary, as the operator is enabled to inject no more than the uterine cavity will hold, by first pouring the quantity which he intends to inject into a glass, and then filling the syringe. . . . From ten to twenty drops I consider to be the maximum that can be safely injected of any of the first three concentrated solutions above named."

The tendency of the canal to contract around the nozzle of the syringe, after full dilatation with spongetents, shows, I think, the necessity of some "peculiar syringe" to prevent the accidents to which the Doctor refers. But the main object I had in view was not to regulate the quantity of such articles as Dr. K. speaks of, —viz., chromic acid, 2 parts to 1 of water; carbolic acid and water in equal parts; saturated solution of iodine, &c.—but to enable us to wash out the uterus freely, without the possibility of distention. I do not by any means think such an instrument unnecessary, and I feel assured the Doctor will soon recognize its advantages.

Again he says:—

"It is claimed for the chromic acid and the compound solution of iodine that they will not affect healthy tissue. My experience confirms this assertion

as I have repeatedly injected these concentrated solutions, into the uterine cavity of patients suffering from catarrh, who were thereby cured of their catarrh, as well as of their sterile condition. Still it may be prudent in ordinary cases to choose the safer way of using diluted solutions only, to prevent exfoliation of the delicate fabric of the uterine epithelium."

Now I am willing to confess that in some cases there is a remarkable insensibility of the uterus in chronic catarrh, but I have so often met with cases where untoward consequences have followed the use of strong caustics, that I have become timid in their use. As before remarked, I believe the reason why chromic acid does not more often do harm, is because the uterus is coated with tenacious mucus, which protects it in those cases where it is sensitive. I do not believe in the doctrine that chromic acid will discriminate between the diseased and healthy tissues; the cases of vaginitis mentioned by Dr. Thomas proves the contrary.

There are many cases of uterine catarrh in which the uterus is much less sensitive and much more tolerant, and where caustics are better borne than in the typical case I have selected; but they are two-edged swords.

Where uterine catarrh is complicated by ante flexion, if there is dysmenorrhœa, uterine colics between the menstrual periods, difficulty in passing a sound through the os internum, all of which are usually evidences of mechanical obstructions, if dilating instruments do not overcome the difficulty, it may become necessary to perform the operation recommended by Dr. Emmet, of incising backwards the cervix.

In all cases, in commencing the treatment of endometritis, if there be much sensibility of the organ, either to the finger or sound, it is necessary to proceed with great caution in the local treatment. Hot-water vaginal injections should be freely used; if there be engorgement of cervix, leeches or scarifications are indicated, together with anodyne suppositories, and other treatment so well given in detail by Dr. Thomas. Any cutting operation, cauterizing, or sponge-tent is hazardous in an irritable uterus, and in my remarks on injections I wish to be understood as applying to the more chronic forms more particularly, though I have received much benefit from copious soothing injections into the cavity of the uterus in its most sensitive conditions. Treat this organ as you would an eye, or any other.

I allude, in the text of my article on Endometritis, to a form of dilating forceps which I am in the habit of using. They are slightly curved, and have a bulb



two inches from the point. Wherever it is desirable to dilate the cervical canal mechanically, I do not see how any instrument can fulfil the indication better, as the dilatation may be as quickly or as gradually effected as the operator desires.

Messrs. Tiemann & Co. could not get the cut ready for me until my article was in the hands of the printer.

ON CHRONIC METRITIS IN ITS RELATION TO MALIGNANT
DISEASE OF THE UTERUS.

BY E. NOEGGERATH, M.D., ETC.

(Read before the New York Academy of Medicine, Oct. 31st, 1899.)

THIS paper, Mr. President, is intended to present to the Academy the result of a few observations with a view to establish some new facts concerning the connection between chronic metritis and malignant disease of the uterus, and which are of sufficient interest, I hope, to engross the attention of this learned body for an evening. Before, however, entering upon the subject proper, I have to make a few remarks with regard to the condition usually called *chronic metritis*, the more so since of late this term is becoming more vague, instead of more defined in its meaning, every pathological condition being called chronic metritis which exhibits signs of an inflammatory nature. It occurs to me very frequently that I examine patients who have been declared to suffer from chronic metritis by physicians of great ability and experience, when the nature of the disease is not one that deserves this name. In former years I have committed the same error, calling all those pathological conditions of the womb chronic metritis which manifested themselves by tenderness, swelling, and an increased diameter of the uterine axis, and which were benefited by a so-called antiphlogistic treatment. The diseases most frequently thus misnamed are: congestion of the entire or part of the uterus, with or with-

out catarrh and erosions; imperfect involution, with catarrh of the body; circumscribed or diffused hypertrophy of the utricular glands; chronic perimetritis, with secondary affection of the uterus; retroversion or retroflexion, accompanied by obstruction of venous circulation; imperfect involution of the seat of placental attachment; submucous infiltration of part of the body or a section of the cervix.

One reason why so many different diseases have been comprised under this name, is the fact that most of them are productive of the same class of rational or subjective symptoms indicating irritation.

2d. The so-called antiphlogistic or alterative treatment, applied to either of the above pathological conditions, has led to similar beneficial results.

3d. The differential diagnosis is very difficult to establish, even with thorough knowledge and ample experience.

Lastly, one of the leading authors in gynecology, Prof. Scanzoni, has described quite a large number of uterine diseases in his well-known pamphlet under the name of chronic metritis, stating that the disease in question took not only the first rank in frequency among the several affections of the female sexual organs, but even among the diseases to which the human body in general was liable. These are the causes which have contributed to render the name of chronic metritis rather vague, and make it desirable to have its meaning restricted to certain well-defined limits.

The disease of which we are treating manifests itself by certain peculiarities which give it a distinct charac-

ter, and enable us to recognize it from among other similar conditions.

With regard to its pathogenesis, all authors, with very few exceptions, agree as to its inflammatory character. The view generally entertained is that advocated by Scanzoni, generally known and generally accepted. My own views on its origin, based on close study of the subject for many years, are somewhat at variance with those now in vogue, and coincide exactly with those entertained by *Prof. Seyfert*, of Prague.

With a single exception, I have never seen a case of so-called chronic parenchymatous metritis to develop itself in a uterus outside of the puerperal state.

The exception to the rule was observed in a sterile woman, Mrs. K., who was treated for catarrh of the uterus by the application of a strong solution of chromic acid to the uterine cavity. Five days after its use, metritis, parametritis, and perimetritis set in, which resulted in true chronic metritis, which exists to the present day, the application having been made about five years ago.

The idea so generally adopted, that chronic metritis was the secondary stage of acute metritis, is entirely erroneous. The former stands in the same relation to the latter as cirrhosis of the liver does to acute inflammation of the liver. They are two distinct affections.

Acute inflammations of so-called parenchymatous organs are exceedingly rare, and this holds good especially with regard to the uterus outside of the puerperal state. The latter affection is of such rare occurrence that I have seen it certainly not more than two or three

times. Its issue, however, is not chronic metritis, but either resolution and restitution or integrum, or shrinking of the organ in all its diameters. Suppuration also has been seen in a very few instances.

Nor have I ever observed chronic metritis as a sequel of so-called uterine irritation, passive vascular congestion, catarrh, endometritis, perimetritis, fibroid tumors, dislocation or disease of the heart. In one single instance I have met with it as a result of cachexia, coexisting with chronic induration of the ovaries and liver.

The disease in question is the combined result of subinvolution of the uterus and a process of exudation which takes place in the tissue of the uterus immediately after delivery, in consequence of puerperal fever. This interruption of retrogressive metamorphosis takes place whenever the natural involution of the uterus is interfered with by some injurious influence, so that the absorption of the exuded masses deposited between the muscular elements cannot be properly accomplished. This results in a development and permanent deposit of cellular tissue within the walls of the uterus.

Both cavities and tissue of body and neck are always equally enlarged. The affection extends over the entire organ. All those cases which have been described separately as chronic metritis of the body and of the neck, are affections of quite a different character and bearing. By exploring the uterus with the sound, we find that the long diameter is always considerably increased, say from three-quarters of an inch to two and three inches. Not so, however, the width of the canal, it being usually narrower, from the fact that the hyper-

trophy is rather concentric than excentric. The tissue of the uterus is exquisitely anæmic and brittle. The capillaries being compressed to a high degree, there exists very little secretion from the membrane lining the cavity. A peculiar kind of granulations, which I have seen only in this form of disease, characterized by their irregular flattened shape, and grayish lustreless hue, very much like those seen in trachoma of long standing, owe their existence to a new formation of conjunctive tissue in the mucous membrane of the uterus itself.

The loss of vascular energy, the rigidity of the tissues involved, explains the small amount of menstrual secretion. Wherever there exists profuse menstruation we have to search for a complication to account for it.

I will not dwell on the description of rational or other physical symptoms, nor treat of the several points establishing the differential diagnosis. It would not come necessarily within the scope of this paper.

The position of the uterine axis is never influenced by chronic metritis, since the enlargement is equably distributed all over its surface. Nor does any displacement of the uterus, no matter how complete, ever lead to its development.

Another peculiarity of the disease consists in the fact that the signs characterizing the affection become latent during pregnancy, to reappear with renewed violence in the shape of an acute attack after delivery. Since I have published my paper, containing the data concerning this fact, in the *New York Journal of Medicine* of 1857, I have had occasion repeatedly to verify the ideas pronounced at that time, and I am

now more than ever convinced that pregnancy and delivery in a woman suffering from chronic metritis will rather do harm than good. I have seen one instance where, under these circumstances, the size of the uterus has increased with every succeeding pregnancy, so that I found the womb, a fortnight after the fifth delivery, to be of the size of a uterus at the fourth month of gestation.

I will further state, that true chronic interstitial metritis is incurable by our ordinary means of treatment. I have, however, succeeded in relieving a few of the cases under my care by the operation first performed by Drs. Sims and Emmet of this city—namely, the amputation of the entire or part of the cervical portion. I have found it, however, necessary not to cover the wound with vaginal flaps, but to leave it to granulate and secrete, in order to bring about the greatest possible physiological activity of the stump after the operation. I find that the beneficial effect of the operation is commensurate with the amount of local and general reaction produced by the effort to close up the wound. The operation, considered in this light, is thus a means, not different in quality from former efforts, such as the use of liquid or solid caustics, the heated iron, the establishing of a secreting surface on the neck by means of a blister or an issue. All of these methods have in view to produce a fresh impetus to sluggish circulation, and thus to promote absorption.

Lastly, I intend to prove that the tissue of a uterus affected with chronic metritis is apt to be transformed into papillary epithelioma.

CASE I.—Mrs. R—, of Charleston, S. C., the wife of a New York merchant, born of a very healthy family, has enjoyed good health up to the time of her marriage, which occurred about 12 years ago.

Soon after this event Mrs. R. had her first child, which, however, died a few days old from imperforate anus. Second child 8 years ago; normal confinement and puerperium.

In March, 1861, she miscarried at the end of the third month of gestation.

In April, 1862, a fourth, and in September, 1864, the fifth child, were born.

This last confinement laid the foundation of all her future illness. The placenta was attached, and had to be removed piecemeal; she recovered, however, after a severe attack of metropéritonitis.

In July, 1865, youngest child died of whooping-cough, complicated with cholera infantum.

Mrs. R. enjoyed a pretty fair state of health up to the month of November, 1865, when she had an attack of eclampsia on the 17th of that month, at three o'clock, and another one at seven o'clock in the morning. She was at the time seven months gone with her sixth child.

At ten o'clock of the same day, when a third convulsion had come on, it was resolved to interrupt pregnancy, and premature labor was induced within an hour's time by means of Barnes's dilator. The placenta was again found adherent. The attacks of eclampsia repeated for two successive nights, always at three and at seven o'clock A.M. Puerperal metropéritonitis followed, which kept her confined to bed for six weeks.

During the first months of 1866, her husband as well as both of her children were taken ill severely, and she passed through an unusual amount of mental anguish, especially so, when her eldest daughter died of cerebro-spinal meningitis.

No wonder, then, that her health lacked the former vigor, and that she complained repeatedly of symptoms pointing to some uterine affection. Although I was aware that the last attack of puerperal fever had resulted in chronic interstitial metritis, I did not feel justified to resort to any very radical treatment for its cure, the more so since the suffering from it was not severe enough to call for actual treatment.

On the 11th of April, however, the patient had a severe attack of ileus, from which she barely escaped with her life. On that same day I made a very careful examination of the abdomen and the pelvic organs, and found nothing altered in the former condition of the uterus. There existed simple engorgement of both neck and body, chronic metritis. The cause of the incarceration was supposed to be a lymphatic band, stretching between the uterine appendages, and part of an intestine, a remnant of the former pelvic inflammations.

Towards the end of April the patient had fully recovered from this attack.

On May 29th, namely, six weeks after the last exploration, I had occasion to examine the womb again, and found to my utmost surprise that the aspect of the neck had undergone a remarkable change. Instead of a homogeneous infiltration and induration of both lips,

it appeared that the right section of the cervix was now more prominently developed than the left side.

Besides, the entire substance of the vaginal portion felt more brittle, and even harder than it ever did before. The left side of the neck, however, was thinned out, and the os in that section presented a funnel-shaped though smooth excavation. With the aid of the speculum it could be ascertained that the former bluish-white color had given way to a grayish or rather yellow tint. There existed only a slight mucous discharge. No hemorrhage, no pain.

On the 3d of June, new irregular knots had developed in the tissue of the right side, while the left part of the cervix appeared to become thinner and thinner.

On that day I excised the entire neck by means of scissors, with the assistance of Dr. Jacobi and Dr. Budd. There was very little hemorrhage, and the oozing was stopped by the application of the actual cautery.

The portion removed was subjected to a careful microscopical examination, and it was found that the entire thickness of the vaginal neck had been transformed in true epithelioma of the papillary or villous variety.

The operation was followed by very little reaction. On the 25th of June, the wound on the right side of the cervix appeared to be covered with healthy granulations, while the left section of the granulating surface did not present quite as favorable an appearance. Proud flesh, of a grayish, bloodless appearance, began to shoot up from the surface to the extent of a half an inch square. This part was touched with the crude

sulphuric acid, and the application repeated six times up to the end of August, after which the entire wound healed over readily, exhibiting a smooth, even surface. The patient, who had lost flesh, and looked pale for some time past, now began to regain her former plumpness and cheerfulness.

During the month of August she had, however, another, though less severe, attack of ileus.

In September she was seized with true epileptic convulsions, for which no cause could be ascertained, either in the condition of the pelvic organs or of the brain. Everything was done that could be thought of to ward off the reappearance of these spasms, but to no avail. They increased in intensity and frequency towards the end of November to such a degree, that she expired during one of these at the beginning of December. The body was opened in the presence of Dr. Jacobi. We found all the organs contained within the chest and abdomen perfectly healthy.

The cause of the several attacks of ileus was found to consist in a band of organized lymph stretching from the posterior wall of the peritonæum obliquely over the lower section of the ascending colon, causing apparently only a very insignificant narrowing of the caliber of the bowel.

There was found a pretty large stone at the upper mouth of the right ureter, which had never produced any uneasiness during life.

The uterus was removed, and exhibited at a meeting of the New York Obstetrical Society. The wound was firmly healed over, and the tissue above appeared to

be quite normal, nor was it possible to detect by the microscope any traces of the former malignant disease. There existed, however, an excess of newly formed connective tissue.

(To be continued.)

CORRESPONDENCE.

By A. JACOBI, M.D.

THE forty-third meeting of German naturalists and physicians was held at Innsbruck, Tyrol, from the 17th to the 24th of September, 1869. The character of these meetings is easily understood by simply knowing that they are held for the same purposes and aims as those of the American Medical Association, and that the means by which these aims are reached are the same. The very looseness of the band that ties the hundreds of participants together; the migrating nature of the society; the absence of rules and laws that are not absolutely necessary, and at the same time the hearty co-operation of the members,—many of whom have never met before, nor ever will meet again,—the general good-will and friendly feeling—all these facts prove invariably the strength and firmness yielded by the cosmopolitan and republican character of science. Science in itself, and medical science as part of the natural sciences in particular, has this republican character simply because of its humane and humanizing nature.

I send this correspondence on a small portion of the transactions of the forty-third meeting of German naturalists and physicians, with the hope that we shall have an opportunity to bid, at any of our next associations, a German correspondent as hearty a welcome as that universally held out to me by our German fellows as assembled at Innsbruck. The only fact I am sorry

for is, that I shall have to confine my reports to a single section for the time being, without being able to do justice—was it but by mentioning their illustrious names—to the hosts of celebrated men whose names are so intimately connected with modern medicine.

The government of the country, the authorities and citizens of the city, the whole population, in fact, of Tyrol felt elated, and showed their enthusiasm daily and hourly at the concourse of the 600 or 700 men, many of whom have erected monuments for themselves "*ære perenniora*."

There were three general meetings, and four days reserved for the meetings of the (18) sections. The 15th section in the list is that of *pædiatrics*. It has been founded but last year, when the meeting was held at Dresden. The meetings of this section were always well attended, sometimes more than thirty gentlemen being present; the discussion always both dignified and animated.

The names inscribed on the first days in the list of the section, were as follows:—

Prof. Ebert (Berlin); Dr. Steffen (Stettin); Dr. Happe (Oldensloe); Dr. Lederer (Vienna); Dr. Schildbach (Leipzig); Dr. Rehn (Hanau); Prof. Jacobi (New York); Dr. Abarbanell (Berlin); Dr. Flesch (Frankfort); Dr. Baurneind (Vienna); Prof. Ranke (Munich); Dr. Hemmer (Munich); Prof. Rinecker (Würzburg); Prof. Moller (Königsberg); Dr. Riedel (Berlin); Dr. Koller (Vienna); Prof. Thomas (Leipzig); Prof. Tschurtschenthaler (Innsbruck); Dr. Kirchhof (Leer); Dr. Cohn (Hanover).

FIRST MEETING, SEPTEMBER 20TH.

Schildbach (Leipzig) explains a school-bench (*subsellium*) of a modern pattern, invented by a gentleman in Chemnitz, Saxony, Mr. Kunze, who, as one of the school-trustees, has studied the subject very carefully. There is no doubt but that many cases of near-sightedness and scoliosis are wholly or partially due to

the benches and tables or desks used in the schools. But the requirements of the practical pedagogue must be met as well as those of dietetics, and Mr. Kunze's subsellium meets both. The proportion of bench to desk, their vertical and horizontal distances, the changes in the position of the desk for the purpose of writing, the facility of getting up from it, the support of the lumbar region (which is of more importance than the dorsal), is all that can be required or expected. The opinion of all the gentlemen of the section is absolutely favorable to the subsellium as presented. I shall return more explicitly to this important subject.

Ebert (Berlin) on Chorea Magna.—Authors differ on its definition. Some speak of chorea as being "magna" when there is great muscular restlessness. Others, when the voluntary (coordinate) motions are disturbed. E. assumes that in the ordinary chorea "minor" the "will is gone," the muscles work independently; that, however, in "magna" the "will is gone as far as it is controlled by psychical functions." The patient cannot move, speak, or act, at will; well-trained children speak naughtily, utter obscene phrases, act indecently and violently; thus they look very much like insane persons. Of this kind E. has seen seven cases. Johanna W., 12½ years old, daughter of a school-trustee, has never been sick (except measles and catarrhal affections). No nervous diseases in the family. Has always been of good temper, docile, and obedient. On the 18th of September, 1868, a dry convulsive cough, no hooping-cough, no fever. Is sent to the country, and returns well. But the cough returns after 8 or 10 days; tartar em., pulv. dov., hyosc., bellad., morph., assafoet., are unavailing; cough becomes more frequent until 50 or 100 times in a minute. After sulphat. cupr. a change sets in. No more cough, but singultus and long inspiratory sounds all day. Food is taken, but swallowed very hastily; the nights are quiet. Never a meningitic or epileptic outery. The ordinary muscular actions, as the holding of a glass, become impossible. Valer.,

chlorof., opium, ferr., of no avail. Affusion of cold water while in the warm bath, somewhat more successful. She gets feeble, incapable of forming the consonants v, p, r; she gets worse until about the end of November; she takes no food, and loses her speech entirely, during and in spite of the application of the constant electrical current. On the 28d of December she screams: "I die, Lord Jesus to thee, good-by;" to quiet her, her rectum is injected with assafoetida, upon which she falls asleep, and feels better the next morning. On the 28th she is still improving, takes cyanide of zinc, and on the 29th cake and coffee. Complains of headache, passes her urine involuntarily, and has urticaria. On the 8th of January, after having complained of pain, has intercostal zoster, and henceforth eats largely of gingerbread, and that only. On the 14th, psychical alienation. Hurts herself and others, grasps her throat, tears her hair, bites and beats. Urticaria. On the 16th of January her articulation is incomplete. Skin hyperæsthetic. Sleeps in a sitting posture. Sometimes lucid intervals, begs her mother's pardon. Clonic and tonic convulsions. Meanwhile evacuation by injections; nutrition good, temperature normal. Zinc., argent., bromid. potassii. In February, lethargy, sopor, alternating with lucid intervals and maniacal attacks, now and then twitchings; when irritated gets maniacal, and is sorry for it afterwards. She is then transferred to an institution for the insane in the beginning of March, is left alone in a room with a nurse, is told to behave, and is supplied with food and books. Is morose at first, but resigned after; sleeps during the night. Is found reading the next morning, and takes her breakfast; asks about noon when she can leave; is told she can after she behaves and gets better, which she does in two days, and is sent home in three weeks.

Moller (Königsberg).—The different degrees of muscular disturbance in chorea render subdivisions necessary. In bad cases he observes sleeplessness as a rule. It reminds him of

delirium potatorum, where this condition may last in spite of large doses of opium. In this condition he relies on bromide of potassium, until, generally within a week, the first symptoms of intoxication set in—viz., acne round the sore elbows and knees.

Rinecker (Würzburg) doubts very much if the whole case is anything but mental alienation. It will occur in children, and has been observed by him in a fatal case in the Julius Hospital. The whole of the symptoms—restlessness, wantonness, malice, lucid intervals, etc.—are just as well seen in the mania of adults. Thus he claims E.'s case as one of psychical disease in general, and mania in particular; and declares it to differ from chorea magna, which is a very rare affection.

Cohn (Hanover).—The diagnosis of chorea magna requires amongst its symptoms the complicated movements, as dancing, jumping, climbing, etc.

Schuller (Vienna) reports the case of a boy of eleven years, with tonic convulsions of the extensors of the lower extremities, alternating after a castigation with singultus, paralysis of the vocal cords, eclamptic attacks, unconsciousness. He lost sight of the patient, however.

Mendel (Frankfort) agrees with Rinecker, and claims the case as a psychical disease solely, but considers it hysteria. The cough in the beginning is characteristic. Ordinarily we meet with such cases at a more advanced age. The rapid recovery is also characteristic.

Happe (Oldensloe) and *Kirchhof* (Leer) report cases.

Moller (Königsberg).—Difficult to point out the difference between chorea and psychical disease.

Jacobi (New York).—There is in E.'s case an affection of the whole nervous system. First a neurosis of the pneumogastric nerve, then of the phrenic (cough and singultus), of the fifth pair and the pneumogastric again, an affection of the brain, all the symptoms of chorea minor, further, general hyperæsthesia and intercostal neuralgia (zoster). Finally a very rapid recovery.

Was there sensitiveness of the vertical column? (*E.* None, until the general hyperæsthesia set in.) The peculiar cough he has seen in boys also. If the girl had been five years older, the case would have been taken as plain hysteria, with its multitude of nervous symptoms and rapid recovery. Hysteria in young girls of 10 or 12 is by no means uncommon. It is positively no case of chorea major, as, for instance, Wicke, or lately Reynolds, have described it, and he has seen it in a boy of 13. Chorea major is a psychical disease, in which attacks of mental alienation and peculiar complicated spasmodic attacks are found alternating, in our times sporadically, in the middle ages epidemically.

Ebert urges that sleeplessness in chorea is but rare; that if this was hysteria, there would be no further difference in future between chorea and hysteria; that a rapid recovery, like that above, is not seen in hysteria (? !); that if this was no case of chorea magna it would be difficult to retain a definition at all, and that there is, in his opinion, no line between chorea minor and magna (major), unless it is the presence of mental alienation.

Flesch (Frankfort) on *Laryngismus Stridulus*.—After briefly alluding to some parts of the literature on the subject, he declares the theory of the thymus being of etiological moment to be impossible. Nor are rhachitis in general, and craniotabes in particular, the universal causes of laryngismus; one-fifth, or at least one-sixth, of all the cases not being due to rhachitis. Besides the usual form, there is, for instance, what he calls *laryngismus ablactatorum acutus* in children who have had the breast for 10 or 12 months, and after that time have been subject to indigestion from improper food. In some such cases he has found "Peyer's plaques as big as a finger," besides very large newly-congested mesenteric glands, and moreover "three new-formed glands on the recurrent nerve, each side." Infants fed on breast-milk do not have laryngismus; affections of the stomach only will but rarely produce it. Thus the intestinal tract is at fault, and must be relieved. Children partaking of liquid food

only, and that by the spoon, will not have laryngismus. For 12 years he allows such children no solid or even semi-solid food, but liquids only, and feeds them by the spoon. This is his only treatment, and for 12 years has lost no case, with the exception of one that died before the doctor reached it, and one that died in a few hours. No case of laryngismus that is alive 24 hours after the doctor's visit, should die. It is not a central affection, but a reflex spasm occasioned by either quantitative or qualitative encumbrance of the intestines.

In the subsequent discussion it is but just to admit that the surprise at "Peyer's plaques as big as a finger," and the "three new-formed glands on the recurrent nerve," was quite general.

Lederer (Vienna) has related, seventeen years ago, ninety cases in hospital practice; all of them were rhachitical. Since, in private practice, he has now and then, but rarely, seen cases not attributable to rhachitis.

Rinecker (Würzburg).—Laryngismus is connected with physiological conditions, with the development of voice and speech. Comparison with strabismus. Proximate causes may be the act of deglutition (the larynx closing in deglutition), the waking up, etc.

Schuller (Vienna) has seen very large Peyer's plaques, and mesenteric glands that never produced laryngismus. Appropriate diet and anti-rhachitical treatment have proved successful; musk of very little use. His mortality is not great.

Stiebel (Frankfort) considers rhachitis as a cause, and is pleased with the effect of aq. calcis.

Jacobi (New York) still upholds the opinions expressed ten years ago in the *New York Journal of Medicine*. With one exception, there was always craniotabes, with its concomitant symptoms. Craniotabes is an early symptom of rhachitis, mostly between the third and sixth months; laryngismus appears mostly between the fifth and eighth months, lasts until the second year, but rarely commences as late as that. Infants at

the breast may also be rhachitical, and have laryngismus. In that exceptional case, where the infant died in the first stage—apnoea—of the attack, he found a large and solid thymus, but has seen larger thymus glands with no laryngismus. Is of Friedleben's opinion, that the thymus has nothing to do with the affection; thinks, however, that the anatomical position of the tracheal glands, when greatly enlarged, might produce an irritation of the recurrent. Takes the disease as a central affection, the first stage of the attack being paralysis, the second reaction. Anti-rhachitical treatment; fresh air foremost.

Moller (Königsberg).—Several causes. There is in infancy a permanent hyperæmia of the cranial bones; the dura mater is firmly attached to the bone; the occiput especially is congested, also the base of the brain, and the origin of the pneumogastric; irritability considerable. As another cause, he considers the physiological development of the brain and voice, as stated by Rinecker. In these, not in the nerves of the larynx, together with disturbances in deglutition, laughing, etc., the ultimate cause must be sought for.

Cohn (Hanover).—Has seen laryngismus mostly at the age of 4 to 10 months.

Flesch.—Peyer's plaques were, in his cases, fully as large as in typhoid fever. Sometimes laryngismus was observed in children of 21 or 22 months. Confesses that in the majority of cases there is rhachitis, but craniotabes and thin osseous tissue are not identical.

The discussion does not pretend to deny that fact.

SECOND MEETING, SEPTEMBER 21ST, 1869.

Rehn (Hanau), on an epidemic of icterus.—A few epidemics, similar in many respects to that observed by him, have been described by Kercksig, in Ludenscheidt, Chardon on the Saône river, and Mende in Greifswald (*Hufeland's Jour.*, vii., xxxi.; and *Cunstatt's Jahresber.* and *Jour. de Lyon*). The cases of

Brüning, of Essen, in 1772 (*de ictero spasmodico*) R. does not consider as belonging to the same category.

The cases were thirty-nine, of which thirty-one occurred in children—sixteen boys, fifteen girls; ten children were 4 years, six 3 years old; twenty-six were between $2\frac{1}{2}$ and 6. In the country surrounding the city there are the records of but very few cases; probably, however, very many cases in the villages were not made known. There were in (1868)

August.....	5	cases, of which 4 were children.
October.....	9	" " 6 "
November.....	13	" " 9 "
December.....	9	" " 9 "
January, 1869.....	1	" " 1 "
February.....	2	" " 2 "

The disease showed no symptoms differing from what is described and known as gastro-intestinal icterus in adults. It is not very common in childhood; so little so, that some authors do not mention it in their treatises on the diseases of children. Perhaps its frequency depends on regions and climates.

Liver not enlarged, except in two cases, which lasted for weeks. Pulse frequently retarded; 96–80; in a single case 68, but regular. In one case 80, and irregular, like the pulse influenced by digitalis. (Henoch states he never saw the pulse retarded.)

The cases lasted from three to twenty days, the average being ten to twelve. A single case terminated fatally, by complication with meningitis and paralysis. In the post-mortem examination he found a cerebral tubercle.

The etiology is uncommonly puzzling. Usually sudden changes of temperature and indigestion are accused. But these are so very frequent, and icterus rare; are there any specific causes? We used to cling to atmospheric influence for an explanation. There were no unfavorable conditions as to life and living, for the epidemic spread among wealthy children as among the poor. The summer had been dry and hot, the autumn and winter were rainy; south-westerly wind from October to Janu-

ary, and fifty-six rainy days from October to December, in consequence.

Flesch (Frankfort) has observed an epidemic in children only, in Frankfort. Etiology not clear; but in one case, where father and child were attacked in the same morning, the patients had taken potatoes the evening previous. Is inclined to look for the cause in the use of potatoes.

Rehn.—His patients eat potatoes all the year round.

Jacobi (New York).—The case looks clear enough. There were fifty-six rainy days in less than three months, the atmosphere loaded with moisture, perspiration impeded, internal capillaries consequently filled, and particularly the mucous membranes congested. Reminds the Society of the connection of combustion of the surface (suppression of function) with intestinal catarrh, especially catarrh of the duodenum; the moisture of the atmosphere having the same, though slower, tendency to inject the duodenal mucous membrane and obstruct the choledoch duct.

Ebert (Berlin).—Were there other intestinal catarrhs at the same period? He is used to meet with intestinal catarrh of every description at the same time when jaundice is frequent, mostly in the autumn, when the temperature is falling or changing.

Steffen (Stettin) on the examination of the heart in its physiological and pathological conditions. The question whether the heart, as far as adjacent to the thorax, and not covered by the lungs, is the only portion safely recognizable by percussion, or whether the remaining portion of the heart also can be accurately diagnosticated as to size and location, is answered affirmatively. In the dead body he has verified his examinations and its results by long needles inserted into the thorax. Especially the right heart of children is amenable to the strictest accuracy of examination. This can be interfered with, however, through the presence of pulmonary infiltrations or pleuritic exudations. In many cases the right atrium can be diagnosticated from the right

ventricle. More exact and elaborate dates on the examination of the physiological heart have been published by his second assistant at the Child's Hospital of Stettin, Dr. Gierke, in *Jahrbuch f. Kinderheilk.* 2, No. IV. His tables give the accounts of infants of a week up to children of thirteen years. Congenital malformations are left out of the lists. Only the congenital hypertrophy and dilatation of the heart has been mentioned; it may be so large as to compress the left lung and to give rise to the erroneous diagnosis of a pleuritic exudation.

Dislocation of the heart upwards: from the abdominal cavity being enlarged by tumors, exudations, or transudations; and by tympanites of the intestines: Lateral dislocations result from large pleuritic exudations or pneumothorax. Dislocation in the direction of the two halves of the thorax is observed after the absorption of large pleuritic exudations, when the lungs will not return to their original size, or the wall of the thorax not follow the shrinking exudation; and finally when, after firm pleural adhesions have taken place in pleurisy, an interstitial pneumonia will set in, terminating in cirrhosis of the lung (and bronchiectasia). In such cases, the lung being, by the previous pleurisy, firmly adherent to the thorax, the wall of the thorax will not sink to any considerable degree, and the heart will change position rather than the wall of the chest. Such occurrences have been observed both on the right and left sides. Finally, the heart may get dislocated downwards, and placed rather horizontally, by encysted exudation between the mediastinum and the mediastinal aspect of the left lung.

Pericarditis: The shape of dullness is not so characteristic as in adults. Not frequent in Stettin. Principal symptoms are: high fever, greater extent of dull percussion sound, feeble action of the heart, especially feeble impulse of the apex, and the sounds less, or little audible. Has seldom or never heard any friction sound transmitted into the carotid arteries. Termination frequently fatal. Transudation has the same symptoms, except fever and friction sounds.

Endocarditis is not unfrequent. Acute cases less frequent than such as have run their full courses. More in the left heart than the right, mostly the mitral valve. Symptoms are, high fever, with violent action of the heart. Gradually a murmur with or in lieu of the first sound, and second sound of the pulmonary artery increased. The same quality of sounds discernible in the carotid and axillary arteries. The sounds of the heart very distinct, heart's action strong. Gradually the dull percussion sound increases, sometimes to the right and upwards only, sometimes to the left also. As the fever decreases the dull percussion sound will decrease, until its normal boundary is nearly or wholly reached. In some cases this diminution is slow, requiring weeks. At the same time the increased action of the heart diminishes until it gets quite or nearly normal; dilatation and hypertrophy is not frequent. In very rare cases, during the acute stage, there is, in addition to the systolic, a diastolic murmur. Such cases as take a chronic course are not unfrequently associated with albuminuria and transudations in the subcutaneous tissue and the abdominal cavity. Endocarditis with incompetency of the mitral valve will frequently heal. Dr. Aufrecht's case proves that the shrinking of one valve is sometimes compensated by an increase in size of another. Dilatation and increased action may return, according to facts given, to their normal condition. The examination of patients of the hospital, made months or years after their endocarditis, prove that the sounds may become entirely normal again, when there was no doubt of the incompetency of the mitral valve.

Finally, Steffen speaks of hypertrophy of the heart observed in cases of atrophy of the kidneys.

Ebert (Berlin) hardly remembers a primary case of endocarditis. Has always seen it associated with chorea and acute rheumatism. Remembers seven such cases. Has never been able to find the enlargement of the heart, as insisted upon by H., nor has he seen a case of incompetency of the mitral valve that got well. Moreover he finds, in cases of latent enlarge-

ment of the heart, the diagnosis between heart and liver, by means of percussion, rather difficult.

Schuller (Vienna).—Was there, in H.'s cases, a cotemporaneous œdema of the extremities? Was not the large extent of the dull percussion sound due to passive dilatation?

Steffen.—Certainly not. Moreover, venous obstructions and passive transudations are less frequent in children than in adults.

Jacobi (New York).—Cannot agree with H. upon the frequency of recovery from well established mitral incompetency; although the disappearance of systolic murmurs is a known fact. Murmurs resulting from rheumatic affection of the heart muscle, or irregular contraction by mechanical causes—for instance, by a neighboring tumor or exudations—are very apt to disappear and to return. Nor is dilatation and hypertrophy so rare; but it follows the disease rather slowly sometimes; is seldom missed after years have passed by. The presence of the systolic (or diastolic) sounds in the carotids and axillaries he has mostly taken for the proof of the affection being aortic, and not mitral. But there can be no doubt of Dr. H.'s correctness of measurement, as the insertion of the needles appears conclusive in its verification of the results of the percussion. The enlargement of the heart in endocarditis appears by no means so doubtful as E. appears to consider it. It is probable that in many cases there is myocarditis cotemporaneously with endocarditis. If so, there is swelling of the muscle, as in every myitis, which will more or less gradually diminish with fever and sickness. Even if no myocarditis, there is certainly collateral swelling, either congestive or œdematous, in the parts adjoining the inflamed serous membrane. We know that by the analogy of the collateral œdema of the muscular layers of the intestine in entero-peritonitis, of the swelled cervical glands in eczema capitis, and of the mesenteric glands in catarrh of the intestinal tract.

Happe (Oldensloe).—In what condition is the liver in endocarditis? His experience in other diseases—for instance hoop-

ing-cough, which in severe cases is apt to result in emphysema—goes to show the frequency of enlargement of that organ.

Steffen.—Is but very rare. Observes enlargement of the liver, particularly in cases of fatty degeneration, for instance in chronic tuberculosis.

Jacobi.—Happe is probably correct in his assumption that acute processes are very apt to give rise to enlargement of the organ; for instance, in cases of acute pneumonia and pleuritis, which terminate fatally in the height of the disease, the liver is found both intensely congested and very large. The enlargement will often diminish, in the course of time, by the venous obstruction gradually becoming more uniformly distributed through the whole system.

Thomas (Leipzig) on *Scarlatina*.—This paper is a careful digest of the Professor's own cases. His results as to the appearance, course, complications, consecutive diseases, etc., are highly flattering to his many predecessors in the literature on the same subject, fully corroborating the present views on the nature of scarlatina. Nothing greatly new was elicited. The epidemics of scarlatina, measles, varicella, variola, and whooping-cough, drawn up in comparative tables, prove an interesting addition to the essay. A discussion on scarlatina sine exanthemata was participated in by Cohn (Hanover), who is rather disinclined to assume its existence; and Lederer (Vienna), Rehn (Hanau), Scheller (Vienna), Steffen (Stettin), and Ebert (Berlin). *Cohn* insists upon the possibility of a mistake, pointing to the elbows and patella as the seat of a trifling eruption, even where none was found anywhere else. *Lederer* speaks of a complication with dangerous affections of the joints, especially knee and elbow joints, which *Thomas* has not seen, except slight affections of the fingers and toes in the second week, no matter whether the kidneys were diseased or not. *Schuller* urges the facility of confounding diphtherite with scarlatina sine eruptione, the latter losing its chances of existence with the increasing number of facts of the multifarious appearance of diphtheria.

THIRD MEETING, SEPTEMBER 22D.

Jacobi on the Use of Febrifuges in Infancy and Childhood.—The principal symptoms of fever are the frequency of the heart's action and the increase of temperature. Both must be found combined; at least, a frequent pulse alone does not indicate fever, or is any way dangerous, for instance, in general hydræmia, or chronic infiltration of the lung. To reduce the excessive action of the heart amounts to a saving of strength, an avoiding of exhaustion; diminution of the temperature of the blood to the same thing, by retarding combustion and preventing nervous paralysis. By regulating the circulation (mostly by exciting the vasomotor nerves) the abnormal pressure in the capillaries, and stagnation of the blood, is removed, and exudation probably prevented. Thus the indications of febrifuges are primary or secondary inflammations, zymotic diseases, and fevers in general. Many of the facts to be spoken of are the results of clinical observation solely, physiological experiments not yet always explaining the effect of medicines in the morbid process. Thus Prof. Heidenhayn, in the section for anatomy and physiology, this morning stated that the irritation of any sensitive nerve will always reduce the temperature of the body immediately, but in a healthy body only, for the effect was none in dogs suffering from pyæmia. Inflammatory processes run a very rapid course in children; therefore, if any effect is to be obtained it ought to be quick and sure. Consequently, the most efficient remedial agent ought to be selected at once, and the dose large; thus only will it act both as a sedative and the part of depletion as formerly used.

Among the febrifuges one of the most powerful ones is cold. The application of cold water, however, offers no differences in childhood from its use in adults. The same precaution, and the same powerful effect. Only very young infants, the new-born especially, are very apt to collapse under its use. Frequently warm water is to be substituted, especially at this tender age;

for the experiment proves that warm water applied to the surface reduces the temperature in the interior. *Digitalis* acts too slowly, its effect setting in after the time it is needed; and then the effect of all the doses given is apt to be cumulative, with vomiting and collapse. Thus it is neither effective nor safe. *Digitalia* acts both more effectively and safely, but still too slowly, as a rule, in acute diseases. Dose in such, for a child of two years, from one-sixth to one-half gr. the first day, As a rule, J. gives it in chronic inflammatory diseases only, as an adjuvant, with ferr., etc. Both *digitalis* and *digitalia* show a certain effect on the temperature, together with a reduction of the pulse. *Veratrum* is both more efficient and safer than either. Dose, one drop every hour until the pulse diminishes in frequency. Effect not cumulative, but when pushed too far, and below the normal standard of the pulse, vomiting will set in. Relief by stopping the medicine, ice, champagne. Safe to add laud., hyosc., mucilages, to the medicine at once. The pulse may be kept at a certain rate with almost complete certainty by moderating the doses. The alkaloid, as is well known at present, is the least effective constituent of the tincture, the resinoid being the most powerful and reliable of the two. May be that the varying results obtained in Germany in former years were due to the fact that many times the alkaloid was administered in preference to the resinoid. At the same time that the pulse gets softer and slower, and the respiration accordingly rarer, the temperature will diminish. The effect on the pulse is so positive that whenever it is not obtained in very severe cases the prognosis is absolutely bad, inasmuch as in such a case the quickened pulse and heightened temperature is the result of paralysis; as, for instance, in the very last stage of tubercular meningitis. As a rule, however, the remedy is indicated in acute inflammations, pneumonia, pleurisy, encephalitis, etc. It appears to act more on the pulse, however, than on the temperature, while quinia is more sure to act on the temperature than on the pulse. Thus large doses (gr. v., once, or three or four times a day) are indicated in secondary inflammations,

hectic and malarial fevers. If possible, in the apyrexia, because digestion and absorption is easier in the febrile stage. Thus, where the effect on the pulse appears to be preferable, the veratrum is indicated; where, however, the high temperature is the more urgent symptom, and besides, where the preservation of strength is of vital importance, quinia, either internally or subcutaneously (when a tolerably neutral solution can be procured). The difference in the effect of the two drugs may depend upon their different physiological action. Thus veratrum appears, like digitalis, to irritate the pneumogastric nerve, while quinia appears to act rather on the sympathetic nervous system, like ergot, which affects all the unstriated muscular fibres uniformly, the uterus, and the blood-vessels. By its effect the uterus is contracted, the spleen diminished in size through the contraction of the blood-vessels, and congestive affections of the spinal meninges and other organs relieved. The administration of preparations of ergot as a styptic is well known. The dose ought to be larger than commonly used; a child of two or three years ought to have the equivalent, in a more palatable and safer form, of two, three, even four drachms of ergot per diem. Ergotism never took place in an otherwise healthy individual, and in no case at all where ergot was taken as a remedy. Alcohol, like camphor, is a stimulus to the brain and nervous system, while greatly diminishing the temperature. It is indicated, therefore, where both ends are to be obtained, in typhus and typhoid fevers, in secondary inflammations. Large doses are not only tolerated, but required. In many cases, with imminent loss of strength and paralysis, stimulating amounts to regulating. It is contraindicated in many acute diseases, especially of the lungs. As alcohol is mostly eliminated through the lungs, no further effort ought to be required from them. The first condition upon which a congested or "inflamed" organ will get well, is rest.

Möller (Königsberg)—The opinion that the Germans have experimented with the alkaloid of veratrum is incorrect. He has always used the resinoid. Naturally, at such a distance, J.

has overlooked many parts of the German medical literature on the subject. Besides those authors mentioned by J. himself, there are, for instance, Vogt, in his "Antipyretic Method of Healing," and his Königsberg colleague, Hirsch, in his "Clinical Reviews." Both used the resinoid.

Jacobi—knows both the authors without having mentioned them; as well Vogt, who wrote eleven years ago, as Hirsch, who published his "Clinical Fragments," not "Reviews," some eight years ago.

Moller.—J. expects too much from the effect of the febrifuges, when he thinks that the relief afforded the pressure in the vessels prevents further exudation. Has always seen that the disease runs its full course, and the process is not stopped at all. Moreover, there are conditions in which there is excessive pressure in the blood-vessels, and still no exudation takes place.

Jacobi.—This may be true, for instance, in chronic heart diseases. But there we have not to deal with an acute inflammatory process,—that is, with an entirely abnormal condition,—and transudation will frequently take the place there of exudation.

(*To be continued*)

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

REPORTED BY GEORGE PEPPER, M.D.

MEETING JULY 1ST, 1869. DR. F. G. SMITH, PRESIDENT, IN THE CHAIR.

CASE OF FATTY DEGENERATION OF THE PLACENTA.

DR. GOODELL presented a specimen of fatty degeneration of the placenta, with the following history:—A woman, æt. 25, married three years, has had two previous miscarriages, at four and six months respectively. On the present occasion she fell in labor precisely one month before term, and gave birth to a putrid child. The placenta was small, firm, nodulated, and of a pink color; studded with yellow granulations, resembling the "orange raspberry," and covered by a diaphanous film, like

ground glass. No hemorrhage had taken place before or during labor, although, from the immobility of the placenta, that organ could not have accommodated itself to the peristaltic movements of the womb, and was therefore liable to become detached.

He enumerated the following theories with reference to the causation of this disease:—(a) That the previous death of the child, by arresting the foetal circulation of the placenta, diminished the afflux of blood to the maternal portion of that organ: that consequently its nutrition was impaired, and atrophy ensued, with its frequent accompaniment of granular degeneration. (b) That this disease starts from detachment of the placenta, or from any other cause which injures its vascular connection with the uterus, and interferes with its nutrition; and that if this increase of the structural disintegration shall exceed the normal healthy growth of the placenta, the foetus will perish from inanition. (c) That as only a portion of the chorion villi are necessary for the formation of the placenta, whilst the remainder become atrophied and are absorbed, probably through a process of granular degeneration, it is possible that this process may be transferred to the placental villi proper. (d) That as the uterus, after parturition, returns to its original size by a physiological act of fatty degeneration; and as a healthy placenta at term contains more or less fat, it may be that this disease is merely an anticipation of the natural termination of the life of the placenta.

After adopting the theory of impaired nutrition as the most tenable one, Dr. G. concluded by stating, that the physiological fatty degeneration of the uterus, after parturition, seemed to him to rest upon causes analogous to those of the pathological fatty degeneration of the placenta.

The state of pregnancy predisposes to fat, apart from the disinclination to take any exercise. There are fat deposits in the kidneys, in the breasts, and in the connective tissue generally. The blood shows an increase of fibrin; albumen and kyesteine are found in the urine. After the completion of gestation this fat is largely absorbed, and is carried into the general circulation. Again, adventitious growths, fibrinous deposits and coagula, when their vascular connections become partially interrupted and their nutrition imperfect, are apt to take on this form of granular degeneration, and become absorbed.

Now, during pregnancy the uterus becomes greatly hypertrophied and excessively vascular. After parturition its office is ended, and it may then be compared to an adventitious growth whose nutrition is checked; for, from the contraction of its fibres, the tortuous vessels are so constricted that the uterus cannot receive the same supply of blood as before, although the gross amount of tissue to be nourished remains constant. Hence

atrophy occurs; its effete cells become infiltrated with oil, with which the blood of the lying-in woman is loaded, and a granular degeneration is the result. If this be the true explanation, it is only another evidence that nature economizes her forces, for the very hypertrophy of the uterine fibres brings about their subsequent atrophy and absorption.

DR. DE FORREST WILLARD presented, for Dr. O. H. Allis, an excellent series of photographs of an anencephalous monster, and read a brief history of the case. Mrs. M—, æt. 32; fourth confinement; her three previous labors were instrumental; children all well formed and healthy. On the evening of June 12th the membranes ruptured without any previous indications of approaching labor. The quantity of liquor amnii was much greater than in her previous labors. About eighteen hours later she began to have irregular labor pains, which increased in severity until the morning of June 16, when Dr. A. first saw her. The pains recurred every ten or fifteen minutes. The patient seemed strong, and only slightly fatigued by the protracted labor.

A vaginal examination revealed a cephalic presentation. The os was dilatable, but the head had not engaged at the superior strait. The pains were severe, but not effective. At 3 P.M., Dr. A. having retired for a few moments, the child was born by a single violent expulsive effort. The placenta was adherent, but removed without difficulty. The monster was of the female sex, very large-limbed and fat, and probably of about 9 lbs. weight. The feet and hands were both clubbed; the former presenting the deformities known as calcaneus and equino-varus. The eyes were large and prominent. The ears hung down like a dog's, and were large and thick. The cheeks were puffed out with fatness. Indeed, the child, or monster, seemed so hugely developed that the head appeared joined to the trunk without the intervention of a neck.

The vertical plate of the frontal bone was deficient above the superciliary ridges. Both parietal bones were wanting; the squamous portion of the temporals, and all the occipital posterior to the condyloid processes, were also deficient.

The scalp corresponding to the deficient bones was entirely wanting; it was not even rudimentary. Lying in the anterior and middle fossæ of the skull was loose cellular substance. There was no cerebrum, cerebellum, pons varolii, or membranes. Upon the basilar process of the occipital bone was a thin lamina of soft yellowish substance, in no way resembling the medulla oblongata in color or texture, but apparently connected with the cord. If this had been a portion of the medulla oblongata, it could only have been the continuation of the anterior columns of

the cord. The cord, as well as the nerves leading from it, were more normal. The umbilical cord was fatty, and contained but one artery. The patient experienced nothing unusual during the period of gestation, was healthy, and constantly at work. The motions of the foetus were strong and vigorous, and felt up to the time of the rupture of the membranes. This last statement of the patient Dr. A. was inclined to question, as from the condition of the skin of the foetus he judged it had been dead at least ten days.

DR. ROBERT C. HARRIS spoke of similar cases, and stated that he had noticed very marked vesical disturbance towards the close of gestation in his patients, and was inclined to attribute this to the fact that the bones of the head were deficient, and so allowed the foetus to settle down into the excavation of the pelvis.

DR. DE FORREST WILLARD related the history of a case of his, where a large cephalocele existed. The case had the usual characters of those of its class.

DR. GITHENS gave the details of a labor in which the child, of medium size, presented by the vertex in the occipito-sacral position, and was expelled without rotation having occurred.

URETHROPLASTY.

DR. JOHN H. PACKARD reported the following case:—

Mrs. E. W., æt. 46 years, was confined for the first time 27 years ago; her labor was a very severe one, but she recovered from it well. Since that time she has had six children, the last about eight years ago. Ever since this last confinement she has suffered with incontinence of urine. She was admitted into the Episcopal Hospital about Nov. 1, 1868, suffering not only from this, but also from constitutional syphilis, contracted from her husband.

Nov. 7.—She was thoroughly etherized, and placed on her knees and elbows, the abdomen resting on a stool covered with pillows. The bowels had been previously evacuated by purgatives and an enema. Sims' speculum was introduced, and the anterior wall of the vagina readily exposed to view. An orifice of some size led into the bladder, with a papilla projecting below it. On careful examination this proved to be the lower wall of the urethra, as if torn away on either side.

At the suggestion of Dr. Agnew, who was present, I pared the edges of the papilla, and freshened the corresponding surfaces on either side. The urethral passage was then restored by securing the raw surfaces in apposition by four sutures of silver wire on each side, fastened with the perforated shot, as in the

operation for vesico-vaginal fistula. Sims' double-curved catheter was inserted, and the patient was placed in bed.

Opiates and light nutritious diet were ordered.

Nov. 17.—Removed the stitches, except two, which were deeply buried in the swollen mucous membrane, and were not taken out till the 29th. On this latter day, union seeming to be perfectly firm, the catheter was finally removed, and she was directed to get up and move about.

To have Tr. cantharidis, gtt. xx. t.d.

Dec. 3.—She is able to hold her urine sometimes as long as two hours. On account of some abdominal pains, the dose of the tincture was ordered to be reduced to gtt. x.

Jan. 28, 1869.—She has again lost the power of retaining her water. On examination, the parts are in good condition, but relaxed, so that the calibre of the new urethra is too great. Ordered Tr. cantharidis, gtt. xv. t.d.

Her subsequent experience was, that the control of the urine only lasted during the continuance of the medicine.

DR. L. D. HARLOW related a case as follows:—

Three days ago I was called to attend Mrs. B. in confinement. Her history was this: Age, 35 years; of good health and constitution. Fifteen years ago she was confined with her first child; had a very severe labor, lasting from two to three days, and was finally delivered with forceps. After suffering several weeks she regained her usual health and strength, but did not again become pregnant for the next ten years. At the end of this time, when about four and a half months advanced in pregnancy, she had a miscarriage, which came on without any known cause. She speedily recovered, and menstruated regularly until her last pregnancy, whose term had fully expired when I was called to attend her.

When I visited her, at three o'clock in the afternoon, I found her pains quite frequent, forcing, and prolonged; her outcry making one think the child was about to be expelled. I was informed that labor-pains came on about two hours before, and had regularly increased in force and frequency. Upon examination I found the os uteri almost fully dilated, the membranes ruptured, and the vertex presenting in a favorable position, and the prospect of a speedy termination would have been fair, *had there not been an insuperable obstacle* at the outlet of the pelvis. About an inch and a half from the ostium vaginæ, stretching from one ischium to the other, was a firm *cartilaginous, crescentic band*, about one-eighth of an inch in thickness and two inches in width, resembling a *gigantic hymen*, and completely closing up the *posterior half* of the inferior strait. Placing my finger upon its free anterior edge, which looked towards the

arch of the pubis, it seemed like a strong cord drawn tightly across the pelvis, just above the outlet, and as unyielding as a piece of sole-leather. This band was doubtless the result of the first labor; the long-continued pressure of the head upon the soft parts at the floor of the pelvis, and perhaps the unskilful use of instruments, causing inflammation, and probably *rupture* of the parts, which nature attempted to repair by the effusion of lymph, thus forming this unyielding cicatricial tissue.

My first impression was, that the child's head could never pass without removing the obstacle by incision; but, knowing the great resources of nature, I determined to wait for a time, and try the relaxing effects of sulphuric ether, which I have found so valuable in rigidity of the os uteri, and of the soft parts generally.

The pains continued active, but not violent, but no progress was made. Before resorting to the knife I decided to ask for counsel, and at seven o'clock called on Dr. D. Hayes Agnew, but he was engaged for the evening. I stated the particulars of the case. He advised before operating to try the application of the forceps, and make all proper effort at delivery, and if not successful, then make an incision of the band. Desiring the presence of a medical friend, I asked Dr. R. R. Taylor to visit the case with me. Dr. T., upon the first examination, was of the opinion that the opposing band would have to be cut. But as the patient was in a tolerably fair condition, without any marked signs of exhaustion present, we concluded to try the forceps. The space was so narrow that I found it impossible to apply Davis's forceps, owing to the width of the blades. After considerable difficulty, I however succeeded in adjusting Hodge's forceps to the head. I now made the necessary traction, using all reasonable force, and continuing, without violence, my efforts, until I was convinced that safe delivery in this manner was impossible.

During this time, which was less than half an hour, the patient was kept under the influence of ether, Dr. Taylor attending to its administration. I now, with a blunt-pointed bistoury, made an incision of the band, half an inch in depth upon each side, corresponding in position to the convex edge of each blade of the forceps. By a very moderate effort the child was immediately delivered. It was still-born. The womb readily contracted; the placenta was removed without delay or difficulty; no hemorrhage of any account followed. The patient was not at any time profoundly etherized. She was conscious a few moments before delivery, and answered some questions intelligibly.

Her pulse had shown some signs of flagging, but not of ex-

treme exhaustion. Brandy had been pretty freely administered; yet it was noticed immediately after delivery that her breathing became hurried, her pulse small and fluttering, and her surface cold. Death followed, to our utter amazement, in about fifteen minutes.

To me the cause of death in this case is obscure. It could not, in my opinion, have been from sheer exhaustion. The patient was in labor altogether not over eight hours, and at no time did the pains exceed those of an ordinary confinement. It could not have been from hemorrhage, for the flow of blood which followed was very slight. When signs of rapid sinking appeared, I examined the womb externally and internally, and found perfect contraction, no loss of blood having taken place.

It could not, I think, have resulted from the use of ether. It was carefully administered, and at no time were there any unfavorable symptoms attending its use.

Death could not have been caused by so simple an operation. There was no evidence of any extensive rupture. No symptoms of disease of the heart or lungs were evident during life.

I regret very much to add, that I could not obtain permission to have a post-mortem examination.

STATED MEETING, AUGUST 5TH, 1869. DR. WM. B. PAGE IN THE CHAIR.

PESSARY REMOVED FROM THE RECTUM.

DR. GEO. C. HARLAN presented to the Society a much eroded and bent ring pessary, which he had removed from the rectum of a patient, and gave the following history of the case:—The woman had had the instrument introduced into the vagina five years ago, for the relief of procidentia uteri, and had worn it with great comfort for two years, when she had a severe fall, since which time she has had considerable pelvic pain, accompanied by a bearing-down sensation. Latterly the pains had increased in severity, and had become complicated by difficulty and distress in defecation. When Dr. H. was called to her he found a portion of the instrument protruding from the anus, and on examination found that it was firmly imbedded in the anterior wall of the rectum; the tissue having united firmly over it, he was obliged to cut the ring, and draw it out of the canal thus formed. No recto-vaginal fistula was left after the removal of the instrument. Dr. H. believed that at the time of her fall, three years ago, the pessary had become displaced, and that the pressure exerted by it on the posterior vaginal wall had gradually led to perforation of the septum between the vagina and rectum, and the almost complete escape of the instrument into the gut; and he explained the absence of a fistulous opening by

the supposition that the tissues had grown up closely around the ring, so that at no time was there a direct communication between the two passages.

The case was commented on by a number of members, and several cases were related where pessaries of the various forms had been more or less deeply imbedded in the vaginal walls; and in one case, narrated by Dr. Edw. L. Duer as having occurred in the practice of Dr. E. Wallace, the pessary was found partially in the rectum—the opening by which it had escaped being still patulous.

DRS. A. H. SMITH and GEO. PEPPER were inclined to believe that the explanation of Dr. H.'s case was to be found in the fact that patients were very apt to remove and reintroduce pessaries at will (and when any trouble was experienced from the act, deny all knowledge of the occurrence); and that when the parts were dilated and relaxed from long standing, uterine displacement, or frequent parturition, the instrument might quite readily, especially when a flexible ring, be introduced into the rectum.

CASE OF RETROVERSION OF THE GRAVID UTERUS.

DR. ALBERT H. SMITH reported the following case of retroversion of gravid uterus, with enormous distention of bladder, at five months:—

June 13, 1868, I was called to see Mary Ann McD., a patient in the Women's Hospital, aged 25 years, a native of Ireland, domestic; married eighteen months; had one miscarriage about a year ago, from unknown cause. Applied for admission to the hospital upon the ground of inability to pass her water; stated that she was seven months pregnant; had been suffering great pain in her abdomen for two weeks, with continued difficulty in urination. The history of the case, as given by the patient, was substantially as follows: Seven months ago she menstruated freely, being at that time in perfect health. At the following ovular period she had no catamenial return, and having always been regular before, she believed herself to be pregnant one month. On the following return, however, she had again a free appearance of the menses, when she thought she was threatened with abortion. Since that time the ordinary signs of pregnancy steadily developed, having had no menstruation since; her health continuing good, except that she has for a month or more experienced a feeling of uneasiness in her pelvic region. Two weeks ago she began to feel a great increase in this pelvic distress, accompanied with difficulty in defecation and in urination, at times amounting to an entire inability. The pain in the abdomen and back became intense, and being unfitted for her

work as a domestic, a few miles out of the city, she came to town and applied for admission to the hospital.

When admitted she was pale and exhausted from suffering; pulse frequent and small, skin cool and clammy, expression anxious and haggard. Examination of the abdomen revealed a tumor, occupying the whole lower region, extending from the pubes a trifle above the umbilicus, and laterally occupying about two-thirds of each lumbar region, pyriform, and of even surface, being about the size of an eight-month pregnancy. Per vaginum examination revealed a large spherical tumor, occupying the entire pelvis to within the distance of the first joint of the index finger from the vulva, presenting a uniform surface, slightly sensitive to the touch; the cervix far up behind the pubic bone. No apparent tumor from distention of the bladder was found above the pelvis; auscultation did not detect any foetal or placental sound; no palpable motion in the foetus could be appreciated, and the patient stated that the movement, which had been distinct for a month, had ceased within a few days. Dr. E. H. Cleaveland, at that time Resident Physician to the hospital, directed the water to be drawn off, which was done (as was supposed) thoroughly; about a quart having passed through the catheter, to the great relief of the patient, when the flow suddenly ceased, and no doubt was entertained of the entire evacuation of the bladder. An opiate was given.

When I saw her, a few hours after the use of the catheter, the general condition, as above mentioned, was unchanged; the abdomen, slightly sensitive, was occupied by a tumor extending above the umbilicus, firm, circumscribed, of uniform surface, slightly elastic, though tense. I remarked the entire absence of any foetal outline; auscultation did not detect the faintest foetal or placental bruit, but communicated with remarkable clearness the aortic pulsation. Introducing the finger into the vagina, I found great heat and dryness of its tissues, and the pelvis, as before described, occupied completely with a firm, well-defined spherical tumor, of slight elasticity, pressing firmly against the lower section of the pubic bone, and entirely obliterating the cul-de-sac of the vagina; the cervix uteri could not be found upon the face of this mass. Pressure upon the abdominal tumor was readily communicated to the pelvic. Carrying the finger upward anteriorly, passing the mass of the tumor, the cervix was found so high up that the index finger could reach it only with difficulty, the os being fully up to the brim of the pelvis, immediately behind the symphysis, being patulous, and showing in a very marked degree the true physiological softening of pregnancy; its canal presented directly downwards, parallel to the face of the pubic bone, so that the finger forcibly carried up

entered readily up to the first joint. Within the pelvic mass was felt, high up, the poorly defined outline of some hard, apparently bony body, not changing its position under pressure.

While endeavoring to explore around the brim of the pelvis, pushing the tumor forcibly upward, a slight gush of water passed over my hand, evidently from the urethra, and continued to do so occasionally, to my great annoyance, and I determined to empty the bladder still farther before I made any more explorations. Having a long catheter with me, which I had had made for introduction during labor, I introduced it, passing it without any difficulty, but requiring to be carried very far up along the posterior face of the pubic bone, fully the length of an ordinary female catheter, before any water escaped. A copious stream then flowed, and continued to do so with great force, until the vessel placed under her (a large bed-pan) had been entirely filled, and a considerable quantity lost upon the bed; the pan was emptied and again replaced; the whole quantity of water collected, and afterwards measured, being over three quarts, and, with that which thoroughly saturated the bed, making up undoubtedly a gallon, in addition to the quart previously removed.

The obliquity of the urethra laterally, and the tendency of the orifice of the catheter to press against the right thigh, causing the water to flow upon the bed rather than into the vessel, so fully occupied my attention that I lost sight for the moment of the possible change in the relation of the viscera, and upon requesting one of the assistant physicians present to make pressure, in order to complete the emptying of the bladder, I was informed that the abdominal tumor had disappeared. Placing my hand upon the abdomen, I found it perfectly soft and flaccid, with no trace remaining of the mass which before had occupied it, though in carrying the fingers toward the pelvic brim a soft tumor was detected.

The catheter was removed from the urethra, and an exploration of the vaginal cavity again made, when I found that the pelvic tumor had diminished slightly in bulk, being more imcompressible to the touch, and having more general mobility; the vaginal cul-de-sac was more marked; the cervix had descended toward the centre of the excavation, the os, however, being only so low as the arch of the pubis, a decided angulation still existing with the body of the uterus. Introducing the whole hand into the vagina, thoroughly lubricated, I made vigorous pressure upon the posterior wall of the uterus, as far back as the tips of the fingers could be carried, and with very little delay the whole body of the womb ascended toward the pelvic brim, the fundus being felt above the superior strait, the cervix passing

backward toward the sacrum, and the flexion of the neck almost disappearing. When replaced, the womb presented about the bulk and position of a pregnancy of four and a half to five months. The patient expressed herself as perfectly comfortable, except a little feeling of pelvic soreness. A suppository of morphia was ordered to quiet local irritation, full liquid nutriment, and the occasional introduction of the catheter.

The case continued to do well from this time; the uterus maintained its position; the bladder was emptied voluntarily the following day; occasionally some strangury presented, and the catheter was resorted to. About three days after the reduction some general and local symptoms of congestion of the kidneys appeared, but promptly subsided under treatment. No effort on the part of the uterus to expel the foetus was made after the first few days, during which the exhibition of morphia by the rectum efficiently controlled it.

July 2, saw the case, about to leave the hospital; the uterus slowly rising in the abdomen, being about two fingers above the pubis; both Dr. Cleaveland and myself thought we detected the foetal pulsation. There is now no difficulty in urination, all the functions are well performed, and the patient being too early in her pregnancy to warrant her remaining for confinement, she will be discharged, to return if any fresh symptoms of trouble should arise.

MEETING OF SEPTEMBER 2D, 1869. DR. WM. B. PAGE IN THE CHAIR.

FIBROID OF THE CERVIX UTERI.

DR. D. H. AGNEW presented a specimen of fibroid growth, removed from the cervix uteri by a longitudinal écraseur invented by himself, and described in the October number of the *Medical and Surgical Reporter*. The patient, of middle age, and the mother of several children, had suffered from menorrhagia for the last four or five years, and was exceedingly anæmic and prostrated. Dr. A., on digital examination, found the mass in the vagina, and after drawing it down, was able to pass a small uterine sound through the os uteri, which appeared as a small orifice on the posterior surface of the growth, into the cavity of the uterus, and gave exit to a considerable quantity of retained blood. The muscular tissue of the uterus was continued over the growth for about one-half its length, and after being dissected off the mass, was removed at about the position of the internal os uteri.

DRS. HARRIS and J. G. ALLEN spoke of cases of fibrous polyps, and narrated the symptoms.

DR. AGNEW narrated the history of a case of congenital

elongation of the cervix uteri in a girl 17 years old, which had been supposed to be a fibrous outgrowth, but on examination the uterus was not displaced; and when the cervix, which was flexed behind the symphysis pubis, was drawn down, it was found to protrude between the labia; it was fully three inches long, very dense, and perfectly uniform in shape—the orifice of the os uteri being at the centre of the extremity. As but trifling symptoms were present, Dr. A. did not recommend any operative procedures.

NEW VAGINAL SPECULUM.

DR. ALBERT H. SMITH exhibited to the Society a new form of vaginal speculum, which had been made at his suggestion by Mr. Kolbè, and which, after considerable use in private and public practice, had fully realized his expectations in giving increased facilities both for diagnosis and treatment over any other speculum that he had used.

It is in form a bivalve, having a double movement, giving a parallel separation of the blades, and also the ordinary angular separation. This double movement was suggested first by Mr. Robert Ellis, of London, and adapted by him to his "new expanding" speculum, described in the *Transactions of the Obstetrical Society of London* for 1867; but his instrument, so far as appears, has not been brought much into use. Mr. Kolbè recently has made a very neat and simple modification of Ellis', giving a very useful instrument, as compared with any form of valve speculum previously in use.

Dr. Smith's speculum, adopting this principle of a double movement, is so constructed as to act as a double vaginal retractor, having the blades separate throughout their entire length upon one side, and connected by a square bar upon the opposite side, along which the blades slide with an independent motion. This movement is effected by means of a right and left screw placed in front of the bar, and passing through the lower end of the pivot-slides which move upon the bar, and to which are fastened the blades. This right and left screw is operated by means of a flat head at one extremity, the turning of which causes both blades to recede uniformly from the centre of the bar, making a parallel separation without any change in the angle of the blades toward each other. The angular movement is effected by the handles of the blades working upon the pivot-joints by which the blades are connected with the bar; and as each blade moves independently of the other, each requires its separate adjustment for retaining it in position; this adjustment being a screw and nut attached at one end to the blade, and the other passing through an eye upon the slide.

By means of this mechanism the vaginal walls can be put upon a stretch uniformly, precisely as with two blades of Sims' duck-bill, applied upon opposite sides of the vagina, with the advantage of being self-retaining.

The instrument, as first constructed and described in the *Medical and Surgical Reporter* for Sept. 11th, had the pivot-slides moving in a slit in the bar, and the right and left screw was then placed beneath the bar, and operated by a milled wheel in the centre; but the form described above has since been found to be stronger, neater, and more efficient in power.

The blades are short, being only $3\frac{1}{4}$ inches in length, allowing the cervix to fall forward toward the vulva, entirely within reach of the finger, which condition, with the opening and separation of the blade entirely upon one side, enables the operator to have complete command of the cervix with the finger while the speculum is in position, the vaginal walls being simply kept out of his way, without any interference from the instrument with his manipulations, an advantage which is not found in Ellis' or any other valve speculum, having the vulvar aperture a closed ring.

The advantage of this arrangement will be manifest to any one accustomed to use the speculum, even in the most ordinary cases of uterine disease. This speculum is easily introduced, retains itself without the slightest difficulty, and exposes the cervix to a completeness that no other single self-retaining instrument will do. Thomas' speculum, so much used in New York City, gives an admirable view of the cervix, but requires to be held in position continuously, thus involving either the aid of an assistant or the constant occupation of one hand of the operator. Dr. Smith's speculum may be introduced with the convexity of the blades either antero posteriorly or laterally; after introduction of the point toward the sacrum, the angular expansion of the blades enables the operator to find the cervix with little difficulty, when the movement of the screw separates the anterior portion of the blades, putting the walls of the vagina upon a stretch, allowing the cervix to fall forward within easy reach of the finger, which can be brought to bear upon its whole surface as far as the vaginal cul-de-sac. The entire openness of one side of the speculum facilitates the digital examination, as well as the investigation of the condition of the vagina, and especially the urethra and adjacent tissues.

In introducing a sponge-tent, so unsatisfactory an operation through any ordinary speculum, great advantage is given from the opportunity of ocular and digital examination, the tent being grasped tightly by the forceps, and directed by the finger in the vagina, without coming in contact with the vaginal moisture.

The passage of the uterine sound is rendered much easier than with the speculum of ordinary length, the uterus not being forced upward and backward, and being allowed more of its natural mobility. In ligating, or excising a polypus or other growth from the cervix, the advantage of combined sight and touch will be very easily comprehended.

So far in practice the use of this speculum has proved perfectly satisfactory, and since the change referred to above, no modification seems desirable; every case, from the tense vagina of the unmarried to the relaxed and open vulva of the multiparous woman, being examined with entire facility.

Figure 1 represents a profile view of the instrument, with the screw mechanism, as last introduced.



FIG. 1.

Figure 2 represents a profile view of the instrument as at first described in the *Reporter*.

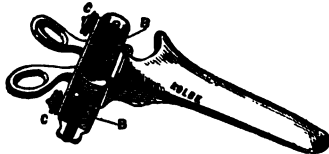


FIG. 2.

Figures 3 and 4 represent the speculum expanded in the two ways, respectively, of parallel and angular movement, the relations of the blades being the same in both the old and new forms of the speculum.

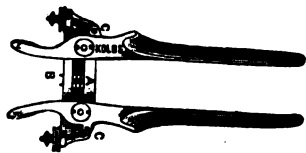


FIG. 3.

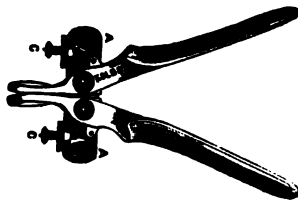


FIG. 4.

REVIEW OF LITERATURE PERTAINING TO

I.

DISEASES OF WOMEN.

I.

DR. JOSEPH KAMMERER. The Pathological Conditions causing Sterility in the Female. (*Trans. of the N. Y. Academy of Medicine*, Vol. III., Part 7.)

This paper is based chiefly on pathological anatomy, and contains a report of the pathological conditions found in the aggregate number of sterile women treated during the last ten years.

I am aware that this is not the first attempt of this kind made, Dr. Charles Mayer, of Berlin, having, in the year 1856, published a paper in which he enumerates the causes of sterility as found in 272 cases observed by him. Among these he found 2 without uterus, 60 with antelexions, 37 retroflexions, 35 anteversions, 3 retroversions, 42 cases of vulvitis, and, among these, 14 with an entire hymen after several years of married life, 51 cases of chronic endometritis, 25 cases of oophoritis, 23 ovarian tumors, 12 uterine polypi, 6 fibroid tumors of the uterus, 1 elephantiasis of the external genitals; in 6 cases no pathological conditions could be found.

In the examination of sterile females we may sometimes find one pathological condition only, for instance, catarrh of the uterine canal; but these cases are the exception and not the rule. Generally we meet with a combination of lesions, which renders it doubtful whether the sterile condition should be attributed more to the one or to the other, as, for instance, where we find adhesions, displacement, and catarrh combined. For a complete understanding of the cause of sterility in a given case, it is indispensable to take into account both the various anatomical lesions which are found to exist in the sexual organs, and the functional derangements connected therewith. This is especially necessary if we wish to calculate with anything like probability in regard to the success to be expected from treatment.

From an early period I have been in the habit, before examining a patient suffering from sterility, to commence by inquiring into the subjective symptoms presented by her, and for the relief of which she came to me seeking for medical advice.

The examination was then proceeded with, and its results carefully noted down under the following heads:

1. Anomalies of Suspension.—To these pertain the various forms of versions, descensus, and other displacements of the uterine body and cervix.

2. Anomalies of Uterine Tissue.—Here are considered hypertrophy and atrophy, contractions of the canal, and adventitious growths originating in the uterine tissue.

3. Uterine Catarrh in its Various Forms.

4. Lesions of Organs in Proximity to the Uterus, chiefly of the Peritonæum and the Appendages.

5. General Conditions and other Anomalies accidentally combined with Lesions of the Uterus.

The total number of cases observed was 408. Of these 201 occurred in private, 207 in clinical practice. The question here occurs, After what lapse of time is it allowable to place a female living in the married condition on the list of sterile women? This, of course, is arbitrary with the observer; but as a conclusion must be arrived at, after mature reflection I was led to make a distinction between three classes:

1. Such as were married during a certain lapse of time and had never become pregnant. In these a period of two years was deemed sufficient.

2. Such as had been pregnant but had miscarried once or several times. For these, likewise, two years were allowed.

3. Such as had given birth to one or several children, and thereupon remained without further issue for a certain number of years, although remaining in the married condition. Here a minimum of five years was considered necessary to have elapsed.

The result of the computation is as follows:

Females two years married who were never pregnant.....	140	Such as had borne children, and then remained sterile for five years or more.....	185
Such as had been pregnant, but had miscarried.....	88		

In the last class (numbering 185) sterility had existed:

From 5 to 10 years in.....	140	From 15 to 20 years in.....	11
From 10 to 15 years in.....	38	Over 20 years in.....	1

Of the whole number of 408, there are noted as sterile:

Under 5 years.....	147	Between 15 and 20 years.....	16
Between 5 and 10 years.....	193	Over 20 years.....	2
Between 10 and 15 years.....	50		

Subjective Symptoms and Functional Derangements.

The motives which induced our patients to seek for medical advice are set down as follows:

Dysmenorrhœa.....	69	Habitual miscarriage.....	8
Menorrhagia and Metrohagia....	57	Hysteria.....	16
Scanty Menses.....	41	Nervous headache.....	8
Premature cessation of menses....	4	Vaginismus.....	2
Never menstruated.....	2	Intercoastal neuralgia.....	1
Retarded menses.....	8		

The number of those who asked for relief of the sterile condition is not noted. The same remark must be made of the many others who complained of painful sensations in the pelvic region, and other ailments standing in remote relation only to the sexual organs. I will now pass to the relation of the anatomical conditions found upon examination in the order above mentioned:—

1. *Anomalies of Position of the Uterus—*

Retroversion.....	20	Descensus.....	8
Anteversión.....	18	Prolapsus.....	1
Dextroversion.....	10		—
Sinistroversion.....	10		67

2. *Anomalies of the Uterine Tissue—*

These are distributed as follows:—

Anteflexion.....	83	Small os.....	24
Retroflexion.....	71	Stenosis of entire cervical canal..	11
Hypertrophy of uterus.....	65	Stricture of internal orifice.....	35
Atrophy of uterus.....	3	Fibrous tumors in walls of uterus.	10
Atrophy of cervix.....	1	Carcinoma.....	5
Infantile uterus.....	2	Polypus.....	6

3. *Catarrh—*

Of the whole number of 408, 342, consequently about seven-eighths of the whole number, were afflicted with uterine catarrh of some form or other, the secretion varying between the serous, mucous, purulent, or a combination of both the latter.

In the majority the affection seemed to be limited to the cervical canal; in those, however, suffering from flexion of the organ, or stricture of the canal, the dilated cavity of the body was undoubtedly the seat of active hyper-secretion.

4. *Affections of Organs in Proximity to the Uterus—*

The peritonæum and the appendages were frequently found in a diseased condition. Thus, there were:

Cases of acute or subacute perimetritis and peritonitis.....	12	Peri-uterine tumors, with undefined seat.....	7
Firm adhesions resulting from previous attacks of peritonitis....	83	Gonorrhœa.....	2
Ovarian tumors.....	14	Acute colpitis.....	1
		Pelvic abscess.....	1

5. *General Conditions and Accidental Diseases—*

Among those belonging to this class, and worthy of remark, I will mention:

Secondary syphilis.....	8	of heart.....	5
Valvular disease and hypertrophy		Tuberculosis.....	5

No anatomical lesions whatever were found in two cases.

It would be an interesting matter to know the exact propor-

tion of patients in whom a cure of the sterile condition was effectuated by a treatment based upon the anatomical lesions found in every individual case. This, however, in clinical practice, is an impossibility, from the fact that the majority, with the exception, perhaps, of those suffering from hysteria, are transient visitors at our public institutions, who underrate the value of medical services which cost them no money. Many, being wearied of the duration of treatment, or unwilling to comply with the manifold inconveniences connected with it, interrupt treatment a short time after it is commenced; the termination of others is never heard of.

Hence it is not astonishing that in the books of our dispensary no more than 3 cases are recorded as having been cured.

Of the patients treated in private practice, who are 201 in number, 25 are put down as having afterwards given birth to full-grown children. About 100 of these were either subjected to no treatment, because they presented an unfavorable prognosis, or withdrew from treatment for some reason or other. About 25 are still under treatment at the present day. If we deduct these 125, it will be seen that treatment was successful in 25 out of 75, or about one-third of the cases treated.

I shall now enumerate the whole list of these 25 cases in a short review of the symptoms which they presented, and the treatment pursued in each individual case.*

From the foregoing statement it appears that the most favorable prognosis for the treatment of the sterile condition is presented by those cases in which sterility is caused by flexion of the uterus, chiefly retroflexion, and catarrh of the uterine canal; not one case, where extensive adhesions were present, or lateral deviations existed, is marked down as cured; neither was I successful in any of those numerous cases where anteflexion was considerable, or the external orifice exceedingly small, which is probably owing to the circumstance that up to a very recent date I had abstained from incising the os, as is now the fashion. It seems to me that in the latter class of cases dilatation by means of the sound, which promises excellent results in cases of stricture of the internal orifice, is insufficient to produce that degree of viability of the cervical canal which I consider as indispensable to the successful treatment of uterine catarrh.

The proportion of cases cured being only 33 per cent., the result of my endeavors has not been very favorable; still it is instructive in many ways, as it shows what can and what cannot be accomplished without the aid of the knife, and teaches us in what cases treatment should be abstained from.

* The cases are not given, for want of space.—Eds.

II.

PREGNANCY, LABOR, AND THE PUERPERAL STATE.

I.

DR. ISAMBERT. On Pregnancy complicated with Variola, Miscarriage, Hemorrhage, Death. (*L'Union Médicale*, No. 66. 1866.)

Mrs. M., aged 35, was extremely anxious to become a mother, but her hope had been twice frustrated. When I was first called to attend her, last year in the month of April, she had just had a miscarriage in the second month, which caused her to keep her bed for a fortnight. I must confess that the miscarriage was never clearly proved to me, for I had seen neither the foetus nor the membranes, and it may have been that a simple metrorrhagia had occurred, for eight days after the first accident she was retaken with a pretty abundant flooding; still the patient believes it was a miscarriage, and that it was the second one she had had. Be that as it may, she regained her health and lost no more blood. A few weeks ago this lady informed me she was pregnant, and in consequence very happy. I contented myself by advising her to be very prudent. On Tuesday, May 4th, 1869, I was called during the day to this lady. She had had fever since the previous evening (Monday, May 3d); she complained of a painful weariness of the whole body, of lumbar pain and of intense headache; she feared a miscarriage, for she had, during the last few days, fatigued herself with long drives. The pulse was 108; heat of skin moderate; tongue slightly coated; bowels constipated. Otherwise there was no local symptom either in the chest, in the abdomen, or in the nervous centres. I ordered absolute rest, a laxative enema, emollient drinks, and 50 centigrammes ($7\frac{1}{2}$ gr.) of sulphate of quinine, to be taken the next morning, as the patient thought she had noticed some intermittence in the phenomena of the invasion. The next day the condition of the patient was much the same; pulse 108; temperature moderate; headache very intense and persistent, notwithstanding the enema which had caused a moderate evacuation the previous evening. The quinine had been taken in the morning; and there had been no febrile exacerbation since the previous evening, confirming the opinion of a fever of a remittent type. The tongue yellowish white; the sclerotics slightly yellow. These symptoms, and especially the persistence of the headache, decided me to order in the evening 50 centigrammes ($7\frac{1}{2}$ gr.) of calomel in divided doses, and sinapisms to the calves of the legs, the effect to be carefully watched, on account of the pregnant state, which dates now from four or five months. The

following day the headache had disappeared; the calomel had caused several bilious stools, and even slight salivation; lumbago had replaced the headache and was the most prominent symptom. As there was still an icteroid tint of the sclerotics, I ordered the calomel to be continued, but in doses of half the previous quantity, combining it with chlorate of potash. The lumbar regions to be rubbed with the camphorated oil of camomile.

On the following day, May 7th, the fifth since the invasion, I was summoned at an early hour by the husband, who said that a red eruption had made its appearance around the abdomen. The idea of variola occurred to me at once, and the aspect of the patient strengthened such an opinion. A strawberry red, scarlatinous, but uniform eruption had shown itself around the pubis, extending toward the iliac fossæ, and toward the great trochanters of the femurs. It covered the superior portions of the thighs, and had spread to the vulva, which was the seat of an intense itching. The pulse was 108; temperature moderate; the headache had considerably abated, but the lumbago was still very persistent; tongue coated; salivation ceased; the calomel had caused no more stools. The patient still clings to the idea of a miscarriage. I encouraged her, suspended all active medication, and confined my efforts to an emollient enema, and embrocations of the oil of sweet almonds for the seat of the eruption. I reserved to myself the fears which the latter had inspired in me.

May 8th, the sixth day. Doubt was no longer possible. The red surface over the lower portion of the abdomen had begun to be papulous; the fever about the same; pulse 108, but the lumbago was more severe. (A small enema, containing 20 drops of laudanum.) I took the husband aside, and said that it might be small-pox. "Oh! my God!" he exclaimed, "she has lately been to see her brother, who has had the small-pox for several weeks." This visit to her brother had occurred on Sunday, the 3d of May, the evening before the invasion. As this was much too short a period to include the incubation period of variola, I inquired more precisely, and was told that this visit had been preceded by others without my being able to learn their exact dates; but it is probable that they dated at least from ten to twelve days before the invasion. Moreover, cases of variola were numerous at that time in that quarter of the city, and a lady had died a fortnight previous of that disease in the same house which the patient lived in. I did not conceal from the husband the grave nature of the prognosis in the case of a pregnant woman; however, as the fever was very moderate, and as that variety of variola which first shows itself as a rash is usually benign in its character and very seldom becomes confluent, I still hoped that a miscarriage could be prevented, or that the

mother in any event would be able to survive the attack. Besides she had been twice vaccinated, at first in her infancy, and again ten years ago.

In the evening the fever had increased somewhat, the febrile temperature rather than the pulse. Red-pointed papules had begun to show themselves everywhere, far off from the primitive eruption,—upon the face, on the neck, on the back between the shoulders, upon the interior and anterior surfaces of the arms, upon the forearms, upon the backs of the hands, and upon the inferior extremities. The pains in the loins still continued very severe. (Another enema, with 20 drops of laudanum; a mucilaginous draught, with acetate of ammonia 4 grammes.) The next morning, May 9th, seventh day, I was called at half-past five in the morning; the miscarriage had occurred. When I arrived it was over; our colleague, Dr. Ad. Liry, who lived in the neighborhood, had been present at the occurrence; he had received a foetus of four to five months, and a placenta which we found to be entire. The mother, fortunately, had lost very little blood. We changed her garments, and put her back in bed, with the usual precautions. Her general condition did not seem bad, but the eruption was not more advanced than on the previous evening, the face being red and swollen, and besprinkled with numerous pointed papules. Upon the trunk and extremities the papules had scarcely made any progress. I substituted for the previous draught a mucilaginous one, containing 15 drops of the perchloride of iron. Evening, 9 o'clock. The patient passed a bad day; agitation; retention of urine; Dr. Liry had returned, had introduced the catheter, and drawn off a quantity of dark-red urine, which deposited a thick sediment resembling burned brick-powder or coffee-grounds. The supernatant liquid was loaded with albumen, as shown by heat and nitric acid. Bleeding gums, dark-colored tongue, and a characteristic foetid odor of the breath. Numerous purplish spots seen upon the neck and breast; the eruption upon the pelvis had become much darker in color; the pustules had not developed themselves. The pulse was small, 130 to 140; the patient losing her intelligence, and seemed to be constantly in a dreamy state. There was evidently no hope for her. (The perchloride of iron was continued, alternating with spoonfuls of burnt brandy.)

On May 10th, the eighth day since the invasion, the patient is very low. Mild delirium since last evening; pulse cannot be counted; ecchymoses upon the neck, arms, and trunk; upon the pubis and in the folds of the groins, the primitive seat of the eruption, the skin is nearly black in color:—died at one o'clock.

In reviewing this case, we find that Mrs. M. died in the fifth month of pregnancy from an attack of small-pox. The origin

of the disease and the period of incubation are uncertain. In fact, it is denied that she entered her brother's room, except on the occasion of her last visit to him, on the evening previous to the invasion, but upon her previous visits she only entered his suite of apartments, not his bedroom; moreover, an epidemic of small-pox was in that quarter, and had already, a fortnight before, made a victim in the same house in which Mrs. M. resided. But although the origin and period of incubation of this case cannot be definitely determined, the same cannot be said of the invasion of the disease; the invasion was that of an attack of small-pox of a benign character—benign by reason of the mildness of the fever and the initial symptoms, and by the late date of the eruption, for this, at first a mere rash, did not show itself until the fifth day, and the first papules not until the sixth day, and finally benign by the very nature of the scarlatinous rash located around the pelvis—a rash which, as a rule, eventuates in variola of the discrete variety, and of which recovery is the ordinary termination. And yet, notwithstanding these favorable presumptions, notwithstanding two antecedent vaccinations, the miscarriage occurs, the variola becomes hemorrhagic in character, and fatal in its issue. Shall we say that the variola was of a malignant nature from the first? Then why such a tardy and mild invasion? Shall we not rather attribute this unusual severity of a form of variola, ordinarily of a benign character, to the unfortunate complication of pregnancy, and to the predisposition previously manifested by Mrs. M. to miscarriages and attacks of metrorrhagia?

III.

DISEASES OF CHILDREN.

I.

DR. EUSTACE SMITH. On Worms found in Children. (*Medical News and Library*, 1869.)

THE varieties of parasitic worms found in children are:—

NEMATODES—

Oxyuris vermicularis, the small threadworm.

Ascaris lumbricoides, the long round worm.

Trichocephalus dispar, the long threadworm.

CESTODES—

Tenia solium, the common tapeworm.

Tænia medio-canellata.

Bothriocephalus latus, the broad tapeworm.

Of these the two first mentioned varieties are by far the most common species found in the child. The *tænia* is rare in chil-

dren under the age of six years, and the bothriocephalus is seldom seen in England, although common enough in Switzerland and Russia. When found in this country, it is usually in persons who have resided abroad.

*Description.**—The *Oxyuris*, or *Ascaris vermicularis*, belongs to the order *Nematoda*. The male measures one-sixth of an inch in length, and its caudal extremity is obtusely pointed. The female is from a third to half an inch in length, and has a long, gradually tapering capillary tail, which terminates in a three-pointed end. This has been supposed to act as a kind of hold-fast.

Both sexes have a more or less fusiform body, the anterior end being narrowed to form a somewhat abruptly truncated head. The mouth is tripapillated, leading into a triangular œsophagus. The integument is transversely striated, and is of a silvery-white color. The penis is single, simple, and very minute. The eggs are long, unsymmetrical, and measure about $\frac{1}{100}$ in. from pole to pole, and $\frac{1}{10}$ in. in the greatest transverse diameter.

The seat of the worms is the lower part of the colon, especially the sigmoid flexure. They are not found in infants at the breast, unless other food is being given at the same time with the breast-milk, but are exceedingly common in older children.

The *Ascaris lumbricoides*, also a nematode, is much larger than the preceding. The male measures from four to six inches long, the female from ten to fourteen. The body, smooth, fusiform, and elastic, is marked by fine transverse rings, and tapers gradually towards either extremity. The mouth is tripapillated; the tail is obtusely pointed. The male is distinguished from the female by a double penis, and by the arcuate form of its tail. The female is broader than the male, being about a quarter of an inch in diameter.

These worms inhabit principally the small intestine, but often pass into the stomach and other parts of the alimentary canal. They are most common, according to Guersant,† between the ages of three and ten years. Their number varies from two or three to twenty, thirty, or even more; they are seldom solitary.

The *Tricocephalus dispar* is not very common in England, but is sometimes found after convalescence from typhoid fever. The male measures an inch and a half in length, the female two inches. This worm is especially characterized by an extremely long filiform neck, which occupies about two thirds of the length

* The description of these worms is borrowed from Dr. Cobbold's work on Entozoa, royal 8vo, London, 1864.

† In *Recueil de Valliex*, "Guide du Médecin Practicien," quatrième édition, month of p.

of the body. The surface of the skin is smooth to the naked eye; but when magnified is found to have on one side a longitudinal band of minute wart-like papillæ, at the borders of which the ordinary circular striæ of the integument terminate. The tail of the male worm is curved, and has at the extremity a short tubular penis-sheath armed with minute retroverted spines. The tail of the female is straight and blunt-pointed.

The worm inhabits chiefly the cæcum and the colon.

The *Tænia solium* belongs to the order *Cestoda*. Its length is very great, often ten, twenty, thirty feet, or even more. In breadth it is about a third of an inch at its widest part. The head, globular, and about the size of the head of a small pin, is produced in front so as to form a short cylindrical proboscis, which is armed with a double crown of hooks, numbering from twenty-two to twenty-eight in each circular row. The head is also furnished with four sucking disks, situated at the four angles. The neck is very narrow, and is about half an inch in length; it is continued into the anterior part of the body, which is sexually immature, and presents only traces of segmentation in the form of fine transverse lines. These lines become gradually more and more widely separated, having short interspaces; and eventually the imperfect segments become more distinctly marked, and true joints are seen. The earliest formed immature joints are very narrow: and it is not until about the four hundred and fiftieth segment from the head that they become sexually mature. The mature segment is called "pro-glottis." The total number of joints in a worm ten feet long, is about eight hundred. A mature pro-glottis is about twice as long as it is broad. It is comparatively thin and transparent, and is furnished with a branched uterus, which consists of a central, longitudinal stem, giving off from seven to ten branches on either side. Each joint has a common reproductive papilla placed at the border on one side below the middle line, but not uniformly to the right or left in series. The male orifice is above the vaginal outlet. The penis is sickle-shaped. The *Tænia solium* is usually solitary. It is seldom seen in children under three years old. Its seat is the small intestine.

The *Tænia medio-canellata* resembles the preceding in every respect except in the head, the cylindrical proboscis and the double crown of hooks being absent.

The *Bothriocephalus latus* is the largest of the cestode worms which infest the human body. In length it is often five and-twenty feet, and it is about an inch in breadth.

The head measures one twenty-fifth of an inch in breadth, is blunt at the top, elongated, and slightly flattened from behind forwards. It is furnished with two laterally disposed slit-like

grooves, but is destitute of hooks. The anterior segments, which are sexually immature, are extremely narrow, and enlarge very gradually from above downwards. After reaching their greatest width in the centre of the body, they begin gradually to decrease in width, but increase in depth: so that while in the central segments the width is much greater than the depth, being as one inch to one-eighth of an inch, in the joints near the caudal extremity, the breadth and the depth are about equal, being frequently a quarter of an inch in either measurement. The body is flattened, but not so uniformly as is found in the *Tænia solium*, as it is rather thicker in the centre than at the sides. The total number of joints has been estimated at about four thousand, the first sexually mature one being the six-hundredth from the head.

The reproductive orifices are in the middle line towards the upper part of the segment on the ventral aspect. The vaginal aperture is immediately below the male outlet, and both openings are surrounded by papillæ-form eminences. The uterus consists of a single tube, often folded regularly upon itself so as to form an opaque centrally-disposed rosette-like mass.

The embryo is ciliated, and moves freely about in water.

The mode in which these different worms obtain admission into the human body is not well understood. It appears probable, however, that in the case of the *Ascaris lumbricoides* the drinking of impure unfiltered water is the ordinary method of admission. With regard to this worm, M. Davaine* states that the ova never become developed in the human intestine, but are expelled from it in large quantities. The yolk does not at once undergo segmentation, and consequent embryonic formation; but remains unaltered in the waters into which it is carried for six, seven, or more months.

After the embryo has been formed, it remains inclosed in the egg until it gains access to the body, when, the shell being softened by the intestinal secretions, it pierces the egg and undergoes further development in the bowel.

REVIEWS AND NOTICES OF BOOKS.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.
Vol. X. For the year 1868. London: Longmans, Green & Co. 1869. (From the Society.)

THIS volume contains the work of all the meetings of the Society from January 1, 1868, to December 2, 1868. Aside

* C. Davaine, Recherches sur le Développement et la Propagation du Tricocéphale de l'Homme et de l'Ascaride Lumbricoïde. Comptes Rendus à l'Académie des Sciences, t. xlv., 21 Juin, 1858.

from the valuable and interesting discussions on different subjects by the members, the book contains many important papers of length and ability; chief among these are the following: "On Cardiac Apnoea after Delivery," by W. S. Playfair, M.D., M.R.C.P., Asst. Obstetrician to King's College Hospital; "A Case of Cæsarean Section," by J. Braxton Hicks, M.D., F.R.S., etc.; "On Puerperal Fever in the British Lying-in Hospital; with Remarks on the Treatment of Puerperal Fever," by Graily Hewitt, M.D., F.R.C.P., Prof. Midwifery and Diseases of Women, University College, etc.; "On the Pain of Parturition and Anæsthetics in Obstetric Practice," by A. Earnest Sansom, M.D., Lond., M.R.C.P., Physician to the Royal Hospital for Diseases of the Chest, etc.; "On Chorea in Pregnancy," by Robert Barnes, M.D., Lond., F.R.C.P., Obstetric Physician and Lecturer on Midwifery at St. Thomas' Hospital, etc.; "On Flexions of the Uterus," by Alfred Meadows, M.D., Lond., Physician to the Hospital for Women, etc.; "Two Cases of Monstrosity," by D. Lloyd Roberts, M.D., M.R.C.P., Lond., Surgeon to St. Mary's Hospital, etc.; "Infantile Temperature in Health and Disease," by Wm. Squire, L.R.C.P., London.

The Papers by Dr. Playfair, Dr. Graily Hewitt, Dr. Sansom, Dr. Barnes, and Dr. Squire are deserving of special notice as valuable and scientific additions to our literature, and it is unfortunate that space limits us to a simple notice of the various articles composing this instructive volume.

FETICIDE, OR CRIMINAL ABORTION. A Lecture introductory to the course on Obstetrics and Diseases of Women and Children, University of Pennsylvania. By HUGH L. HODGE, M.D. Philadelphia: Lindsay & Blakiston. 1869. pp. 46.

PUERPERAL ECLAMPSIA. By THADDEUS A. REMY, M.D., Prof. of Puerperal Diseases and Diseases of Children, Starling Medical College. Reprint from Trans. Ohio State Medical Society. 1868.

PUERPERAL ECLAMPSIA. By C. C. F. GAY, M.D., Buffalo.

THESE three pamphlets are not deserving of the name of treatises on their respective subjects, and doubtless their authors do not wish them to be so considered. Prof. Hodge's is a republication of an essay delivered before the students of the University of Pennsylvania in 1839 and 1854, and was read a third time as above stated, with the addition of some new and recent observations on so important a subject. The object of the essay is to impress upon medical men the importance of foetal life, and therefore persuade them to use their opportunities to prevent the

destruction of the unborn child. The moral as well as the religious aspect of the crime of abortion is ably shown forth by Prof. Hodge, and there must have been very few of his listeners who were not impressed with the truths he sets forth.

Of the two pamphlets on puerperal eclampsia, that by Prof. Remy is deserving of the best notice, as evincing that more thorough knowledge of this disease which is gained only by a large experience. An advocate for blood-letting as superior to all other remedies, Dr. Remy also places great confidence in chloroform *per se*, and as an adjuvant to the lancet. Diuretics he considers unnecessary, and even injurious, from their irritating the kidneys. A statistical table of 94 cases of puerperal eclampsia, in 32,630 cases of labor, is appended, which show the results of the treatment by venesection; only 8 deaths occurring in 94 cases so treated.

Dr. Gay's pamphlet is more of a *résumé*, but also contains his opinion in regard to the opium treatment, which he thinks has not been fairly tried, it having been his experience that a woman in eclampsia will tolerate enormous doses of this narcotic. Though not a great advocate of general blood-letting, Dr. Gay still thinks that if resorted to at all it should be in the early stage of the attack, and in sufficient quantity to affect the entire circulation. Both these pamphlets are honest endeavors to contribute something to enlighten much of the darkness that surrounds the treatment of so dreaded a disease as puerperal eclampsia.

ELECTRICITY IN ITS RELATIONS TO PRACTICAL MEDICINE.

By Dr. MORITZ MEYER, Royal Counsellor of Health, etc. Translated from the third German edition, with notes and additions. By WILLIAM A. HAMMOND, M.D., Prof. of Diseases of the Mind and Nervous System, and of Clinical Medicine, in the Bellevue Hospital Medical College, etc., etc. D. Appleton & Co., New York, 1869. 8vo, pp. 500.

THIS very timely publication has reached us too late for a thorough analysis. We will say, however, that it is destined to fill a want long felt by physicians in this country. The technical part is not too elaborate, and throughout the work apparently unbiased choice is made of the induced, or the continuous current, according to physiological principles and pathological states. Toward the close of the volume are cases and remarks highly interesting to the gynæcologist, and pregnant with future results. We refer to the use of electricity as emmenagogue and galactagogue; as a stimulant to uterine contractions in timely and premature labors; as an effective agent (perhaps the best) in the resuscitation

of infants apparently still-born. As a caustic it is well spoken of in cases of hemorrhagic ulcer, polypi, etc. Some cases are also reported of chronic enlargement and malpositions of the womb in which the electric current was successfully employed. The work appears in a very handsome garb, and is well printed. The English is very readable, and Dr. Hammond deserves the thanks of the profession for his editorial labor and for some valuable additions.

A TEXT-BOOK OF PRACTICAL MEDICINE, with particular reference to physiology and pathological anatomy. By **FELIX VON NIEMEYER**, Professor of Pathology and Therapeutics, Director of the Medical Clinic of the University of Tübingen. Translated from the seventh German edition, by **GEORGE H. HUMPHREYS, M.D.**, one of the physicians to the Bureau of Medical and Surgical Relief at Bellevue Hospital for the Out-door Poor, etc., and **CHARLES E. HACKLEY, M.D.**, one of the physicians to the New York Hospital, etc. New York: D. Appleton & Co. 1869. 8vo, pp. 1,500. (Two volumes.)

SPACE does not allow us to say all that we could wish in regard to the two valuable and beautiful volumes before us. It is perhaps, however, sufficient for most readers to but know the name of the author of a book to be able to place a valuation upon the results of his labor; and as the name of Niemeyer has long been familiar to the profession as that of a great pathologist, it would be quite safe to assume that a work of his composition must necessarily possess some rare and peculiar merit. That this is true of the volumes before us, we have been convinced after a careful perusal of their contents, and we sincerely regret that we cannot show the reader the immense scope and truly scientific character of this book, the author of which shows himself to be a thorough scholar in all the normal and abnormal phenomena which are constantly occurring in the various tissues and organs of the human body. The most attractive feature of the work is that it dwells more fully than other text-books on the pathological anatomy of the diseased tissues and organs of the body. The translators have done their work admirably, and deserve universal thanks.

THE SCIENCE AND ART OF SURGERY. Being a treatise on surgical injuries, diseases, and operations. By **JOHN ERIC ERICHSEN**, senior surgeon to University College Hospital, etc. From the fifth enlarged and carefully revised London edition, illustrated with six hundred and thirty engravings on wood, with additions by **JOHN ASHHURST, JR., A.M., M.D.**, Vice-President of the Philadelphia Pathological Society, etc. Philadelphia: Henry C. Lea. 1869. pp. 228.

IF there are two books which are more familiar and more generally known to the medical student, they are those of Watson's Practice and Erichsen's Surgery. And few will deny that their distinguished authors are not deserving of this and all honor which has been paid them. Watson's Practice but a few years since might have been called the *Bible* of physicians, and Erichsen's volume now before us is not undeserving of a similar compliment from the surgeon. The original English edition is too well known to need any recommendation on our part, but this American edition has so much in it that has been added by the American editor, Dr. Ashhurst, as to call forth the highest praise and most sincere admiration of the completeness with which he has done his part in rendering the book the best on general surgery which is offered to the surgeon in this country. It is not our intention to dwell upon the particular merits of this imposing volume, for, as already stated, its name is its best recommendation. We feel justified, however, in stating that every physician should possess himself with a copy, if indeed for no other reason than that of its being a handsome and valuable addition to his library.

ZELL'S POPULAR ENCYCLOPÆDIA, and Universal Dictionary of History, Biography, Geography, Science, Art, and Language. Edited by L. COLANGE. Philadelphia: T. Ellwood Zell. New York: M. B. Bond, 7 Murray street.

WE have received Nos. 11, 12, and 13 of this highly promising work, the first issues of which were noticed in our last number. The parts before us bear evidence of the same care and completeness which was the great recommendation of the previous ones, and we again advise our readers to possess themselves of so useful and elegant a work. It is issued in monthly parts, fully illustrated, at the low price of 50 cents each.

BOOKS RECEIVED.*

ON THE SPONTANEOUS AND ARTIFICIAL DELIVERY OF THE CHILD IN FACE PRESENTATIONS WITH THE CHIN POSTERIORLY. By ISAAC E. TAYLOR, M.D., Emeritus Professor of Obstetrics and Diseases of Women and Children in the Bellevue Hospital Medical College, New York, etc. New York: D. Appleton & Co. 1869. 12mo, pp. 26.

TWO CASES OF ESOPHAGOTOMY for the removal of foreign bodies; with a history of the operation. Second edition. By DAVID W. CHEEVER, M.D., etc. Boston: James Campbell, 18 Tremont street. 1869. 12mo, pp. 88.

OUR HOME PHYSICIAN; a new and popular guide to the art of preserving health and treating diseases, etc. By GEORGE M. BEARD, M.D., etc. New York: E. B. Treat & Co. 1869. 12mo, pp. 1066.

PRACTICAL MANUAL ON THE TREATMENT OF CLUB-FOOT. By LEWIS A. SAYRE, M.D., Prof., etc. New York: D. Appleton & Co. 1869.

ORTHOPÆDIC SURGERY. By BUCKMINSTER BROWN, M.D. Boston: James Campbell. 1869.

THE MEDICAL REGISTER OF NEW YORK CITY, BROOKLYN, AND VICINITY. For the year commencing June 1st, 1869. Vol. VII. JOHN SHRADY, M.D., Editor. New York: J. M. Bradstreet & Son. 1869. (With Supplement.)

* Will be reviewed in next Number.

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ORIGINAL COMMUNICATIONS.

RELAXATION OF THE PELVIC SYMPHYSES DURING PREGNANCY AND PARTURITION.

BY FREDERICK G. SNELLING, M.D.

(Read before the Medical Journal Association of New York, December 8, 1869.)

Mr. President and Gentlemen :—I propose to advert briefly, this evening, to a condition not so generally recognized in this country as it might be, but which in Italy, Germany, and France has received a merited amount of attention. I allude to relaxation of the pelvic articulations during pregnancy and parturition.

This condition has been known and commented upon since the time of Hippocrates, but it is a noteworthy fact, that but few of the systematic writers on obstetrics refer to it. Still, we find a few monographs and

isolated allusions to it scattered through medical literature by the most eminent authorities, among whom are Winckel, in his *Pathologie and Therapie des Wochenbettes*, Berlin, 1866 ; Ballochi, *Manuel. di Obstet.* Milan, 1859 ; Cazeaux, *Traité Théorique et Pratique de l'Art des Accouchements*, Paris, 1867 ; various writers in Schmidt's *Jahrbucher*, Nos. 1, 8, 58, 103, and 130 ; Blundell, Griffith, Debout, Erichsen, Jacquemier ; Trousseau, in his *Leçons Cliniques sur le Relachement des Symphyses du Bassin* ; Courot, Desormeaux, Churchill, Meissner, Smellie, Stoltz, Luschka, Albini, Laborie, Cruveilhier, Ercole Galvani, Velpeau, Lenoir, and Dubois.

The affection appears to consist of a relaxation of the pelvic articulations, becoming apparent suddenly after parturition, or gradually during pregnancy ; and permitting of a degree of mobility of the pelvic bones which effectually hinders locomotion, and gives rise to the most peculiar, distressing, and alarming sensations. It can, perhaps, be best illustrated by the following case by Dr. Duplain.

The patient, Madame —, was 26 years of age, of a lymphatic temperament, married four years, and the mother of three children. The last child was born about the middle of May, 1867, after a labor lasting twenty-two hours, and was a child of unusual size. After its birth she was almost constantly confined to the bed, from the difficulty, and indeed impossibility of walking, and a singular and distressing sensation, as if the abdominal viscera were about to fall through the pelvic outlet. She also had vague pains, increased on

motion, in the hips, at the symphysis pubis, and in the loins. As for the other symptoms, her appetite was good, her sleep sound, pulse normal, bowels regular, and urinary secretions healthy. The vaginal touch disclosed no malposition, or other disturbance of the uterine system. On palpation, the abdomen was supple and lax. On examining the patient in a recumbent position, the lower limbs presented nothing abnormal; their sensibility was intact and movement was free and painless. But immediately upon arising, the sensation complained of returned with much severity, walking was accomplished with difficulty, and she dragged one foot after the other, inclining herself to the right and left as the case might be. On compressing the pubic and sacro-iliac symphysis some pain was experienced.

From the symptoms supervening upon delivery, the physician, M. Duplain (eliminating the possibilities of disease of the spinal cord, of the pelvic viscera, lumbo-abdominal neuralgia, &c.), judged it to arise from a relaxation of the pelvic symphyses, and the sequel justified the accuracy of the diagnosis.

A bandage was placed about the pelvis and hips in such a manner as to compress and confine the articulations firmly. Walking immediately became easy; she could maintain an upright position, the pains disappeared, and at the end of two months, without any other treatment, the patient left off her bandage and found herself entirely cured.

This may be regarded as a typical case of *uncomplicated* relaxation of the pelvic symphyses.

Of a similar nature was the following case occurring in the experience of the writer. Mrs. H—, aged twenty-two, primipara, was safely delivered on the 14th of last August of a healthy female child, at full term. The labor was short, lasting but eleven hours; the presentation normal, and delivery was accomplished without accident. The case progressed favorably in every respect until the tenth day after confinement, when she was allowed to leave her bed. She almost immediately complained of the great difficulty of walking, and of the singularly distressing sensation caused by motion in an upright position. I made a digital examination, expecting to find malposition of the womb. I found that there was relaxation of the anterior wall of the vagina, but the womb was high up, and not larger nor heavier than it should be at such a time. I advised rest in the recumbent position, and (the lochia having ceased) injections of alum and water, a pill of two grs. of the extract of gentian and one-fourth of a gr. of extract of nux-vomica, as a general tonic. At my next visit, two days afterwards, having remained the greater part of the time in a recumbent position, she was somewhat improved, but the improvement was but temporary. At a subsequent visit I found her in tears, all her symptoms and sensations having returned. They were peculiar. There were vague pains in the pelvis, no particular sense of dragging or weight, none of the train of nervous symptoms which attend uterine displacements; but her main complaint was of the impossibility of walking. She could not tell why, nor for what reason, but she simply could not do

it. After dragging herself partly across the room, her sensations became so peculiar and unendurable that she was forced to sit down at once, lest she should fall. Professor Barker, who saw the case in consultation with me, thought that it might be a case of relaxation; and I therefore examined her in an upright position, by grasping the symphysis pubis, from before backward, between the two fingers in the vagina and the thumb upon the mons veneris, and then directing the patient to balance herself first upon one leg and then upon the other. The movement of the bones was distinctly felt, one upon the other, to the extent of a quarter of an inch or more. A girdle firmly applied about the hips relieved her in two months.

Trousseau presents four similar cases. The patients had had one or more previous labors, followed by normal recoveries. The children's heads were not of abnormal size. The patients were either absolutely unable to walk, or could not maintain the erect position. They complained of pains in the thigh and pelvis, or in walking they twisted the legs one over the other. Standing upon one foot was almost out of the question, when the symphysis pubis was the seat of the relaxation; and in some it caused violent pains in the groins, if the sacro-iliac symphyses were affected.

Dr. Hodge mentions a marked case. About two months previous to the birth of the patient's fifth child, while walking across the room, she was suddenly checked in her progress by the seeming dislocation of the pubic bones, which she believed to be jointed; causing

intense agony, accompanied by a sound like a pistol-shot. Leaning on something near by for support, her movement caused the bone to slip into place again, when she was enabled to take a few steps, but with great suffering. These painful sensations and sounds occurred again and again, when attempting to get up or lie down, till the birth of a fine large child, which, it may be well to say, caused less pain than she had ever experienced on any previous occasion; leaving her, however, with so-called prolapse of the womb, and the innumerable distressing sensations of such disease, for eighteen months. She then became again pregnant, and enjoyed good health until two or three months before confinement, when she suffered as before, which, contrary to expectation, brought no relief. The pain in the bones seemed permanent; numbness and stiffness were present in the left hip, which also gave way with a noise and pain when she would lift her foot. She then dragged it as if paralyzed. This continued for six months, until she was taken to Philadelphia, where she was relieved of some of her suffering; but ten months elapsed before she was sensible of a decided improvement in the condition of the bones. Dr. Hodge speaks of it as a peculiar phenomenon in connection with a retroverted uterus, disappearing upon the removal of the displacement, but does not allude to the disease under consideration.

Pigeolet saw a woman, who, after a difficult instrumental labor, was obliged for a long period to keep her bed, with protracted pains in the pelvis. On the fourth day of the second labor she had chilliness about the pelvis and torpor of the lower extremities. The patient was

forced in order to ease herself to maintain a flexed and curved position in bed, any motion of the pelvic symphyses causing dull pain and an unpleasant sensation of crawling and formication in the lower extremities. Urinating was accompanied by pain in the symphyses, and the bowels were torpid. She had no fever. After putting on a pelvic bandage the disease yielded in six weeks.

Putegnat refers to two cases. One was a woman four days delivered of twins, who made a few steps in her chamber, and the next day she experienced a slight pain in the symphyses on motion, which endured for a long period. At the same time the walk was uncertain and tottering. Cupping, general baths, tonic frictions, absolute rest, and a pelvic bandage were used, and the next labor was accomplished without further untoward consequences.

Another case was happily cured by compression of the pelvis. Both of these patients were healthy and robust women.

Courot cites two cases. The first of them arose from an abortion. Walking was impossible, and standing painful. After wearing for four months Martin's girdle, the patient was so far cured that she could undergo great fatigue. The second case involved the left sacroiliac symphysis. Martin's girdle was worn during pregnancy, although throughout its pressure was annoying. She remained twenty-five days in bed and then resumed it, wearing it three months more, and was then able to leave it off. By the third pregnancy the disease was not reproduced

The pubic symphysis in common with the sacro-iliac articulations belongs to the second class of the amphiarthrodial or mixed articulations ; those, namely, in which the surfaces are connected by fibro-cartilage, and lined by a partial synovial membrane. I here present a drawing, Fig. 1, after Cruveilhier, representing a section of

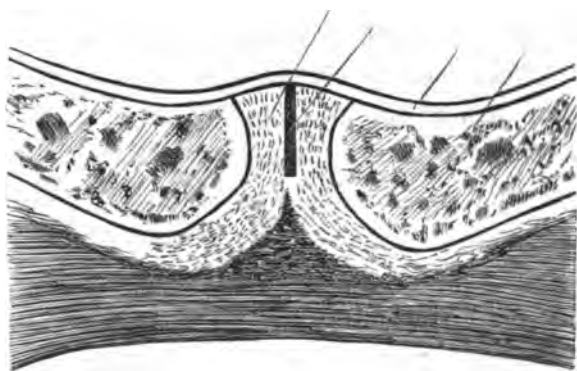


FIG. 1.

the pubic symphysis coinciding with the plane of the superior strait. Its articulating surfaces are oval, of large diameter obliquely below and behind, bevelled from behind forward, and from within outwards ; from which there results in front a triangular space of separation, the base of which is directed forwards, and the apex backwards.

The inter-articular fibro-cartilage consists of two oval-shaped plates, one covering the face of each articular surface. They vary in thickness in different subjects, and project somewhat beyond the level of the bones, especially behind. Each is firmly attached to the bone

by a number of nipple-like processes which accurately fit within corresponding depressions on the osseous surfaces.

Their opposed surfaces are connected throughout the greater part of their extent by an intermediate fibrous elastic tissue called the inter-osseous ligament, Fig. 2,

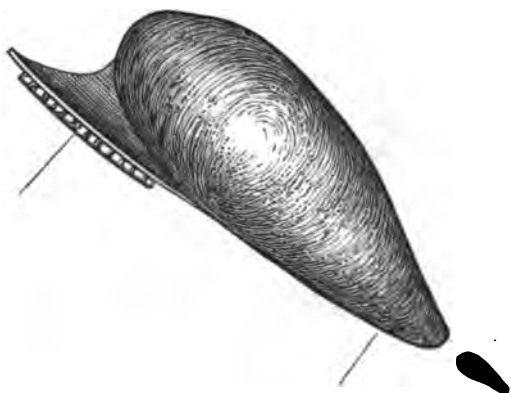


FIG. 2.

and by their circumference to the various ligaments surrounding the joint. An interspace is left between the two plates of cartilage at the upper and back part of the articulation, where the fibrous tissue is deficient, and the surface of the fibro-cartilage lined by epithelium. This space is found at all periods of life, both in the male and female, but it is larger in the latter, especially during pregnancy and after parturition. It is most frequently limited to the upper and back part of the joint, but it occasionally reaches to the front, and may extend the entire length of the carti-

lages. The accompanying sketch, Fig. 3, of a vertical section of the symphysis pubis, made near its posterior surface, well displays these various points.

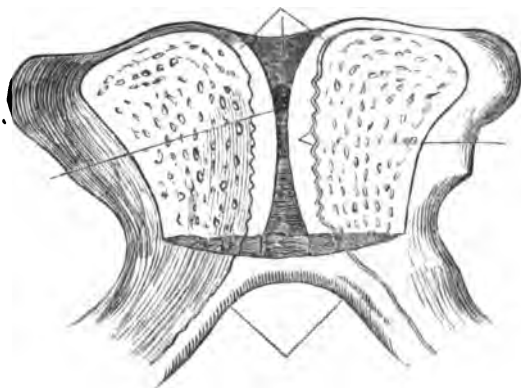


FIG. 3.

The extent to which the two articular surfaces are in apposition, it must be borne in mind, varies greatly in different subjects. Occasionally the two surfaces will be continuous throughout their whole extent, while again it will be found, in another subject, that the surfaces touching one another are quite limited.

The joint is further strengthened by four ligaments, named respectively, from their positions and functions, the anterior, posterior, superior, and sub-pubic ligaments.

The anterior ligament consists of several superimposed layers, which pass across the anterior surface of the articulation.

The superficial fibres pass obliquely from one bone to the other, decussating and forming an interlacement with the fibres of the aponeurosis of the external oblique. The deep fibres pass transversely across the

symphysis, and are blended with the inter-articular fibro-cartilage. The sub-pubic ligament is a thick triangular arch of ligamentous fibres connecting together the two

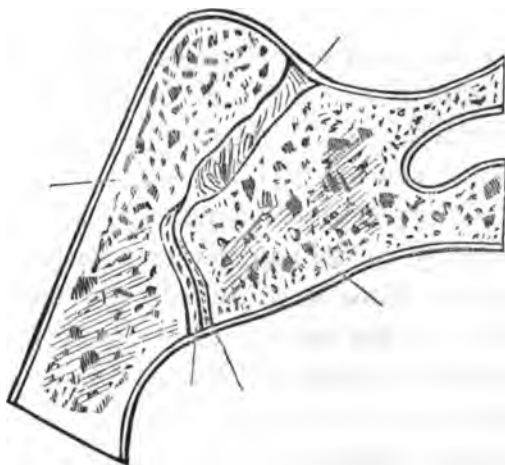


FIG. 4.

pubic bones below, and forming the upper boundary of the pubic arch.

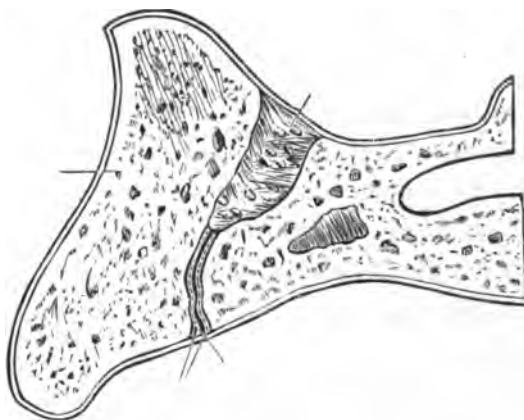


FIG. 5.

The sacro-iliac articulations, of which Figs. 4 and 5 are vertical sections, though of the same class, are more

intimately linked together than the symphysis pubis. The articular surfaces are not in apposition throughout their whole extent. That portion which is continuous is posterior. The articular surfaces are sinuous, alternately concave and convex, and have a double obliquity so contrived that those of the right side converge with those of the left, towards the summit of the sacrum on the one hand, and towards its upper and posterior face upon the other; in such manner that a force applied perpendicularly to its superior and posterior surface would tend to force it easily into the pelvic cavity, were it not for the sinuosities of its surface and its peculiar mode of union, which is as follows: The articular surfaces are "*revetted*" throughout their whole extent with a layer of cartilage, thicker upon the sacrum than upon the ileum. The cartilage is remarkable for the roughness of its surface, which contrasts with the glistening aspect of other articular cartilages. A synovial membrane, difficult of demonstration in the adult and aged, but quite manifest in children and in females during pregnancy, lines its cavity. The interosseous ligament is the most powerful of all its means of union. It is composed of a multitude of interlaced ligamentous fibres, extending horizontally from the sacrum to the ileum, almost completely filling the deep excavation between the two bones. The other peripheral ligaments are mere reinforcements to the strength of the joints. They are the anterior, posterior, inferior, and superior sacro-iliac. To these may, perhaps, be added an ileo-lumbar and sacro-spinal ligament, of but little moment in this connection.

Laborie insists, however, with regard to the pubic symphysis, that the two opposed articular surfaces have not the same conformation, but that the left is smaller and obscurely convex, after the fashion of the rudimentary head of a joint; and that it sinks into the opposite articular surface. Of this relation I have not been able to satisfy myself. Were it so, it would certainly tend to increase the rigidity of the articulation, but for the fact that the interposed fibro-cartilage and the bevelling of the bone-ends on all sides acts as a counterpoise. He also insists upon a peculiar hinge-like motion of the whole pelvis during labor. He thinks that upon the entrance of the foetus into the superior strait any movement of the bones is impossible, but as the head passes down and reaches the inferior strait, a sort of hinge-like movement is acquired, the tuberosities of the ischia being separated, and the crista ilii approximated. This, however, can hardly be considered as established. Drs. Galvagni and Golinelli experimented upon a cadaver, but were unable to demonstrate the hinge movement. They did find, however (the subject, by the way, being a woman who had died of puerperal eclampsia), that the sacrum could be moved up and down between the two ossa innominata to a sensible extent when the pelvis had been separated from the trunk and limbs. On section of the symphysis pubis, a distinct cavity with irregular walls, and of a blunt ovoid form, was found in the centre, as stated above.

Many will be slow to believe that so intimate a junction, so firm an articulation, should admit of

motion, but the evidence upon the point is too overwhelming to admit of question.

As a concomitant of the pregnant and puerperal state, it has been maintained by numerous authors from the earliest times, including even Hippocrates. Chally held that softening of the pelvic ligaments was a constant and normal phenomenon during pregnancy. Jacquemier thinks that the ligamentous union of the pelvic bones is always swollen to a third or even one-half greater volume during pregnancy. Velpeau concurs in the view of Chailly. Lenoir asserts that there is a decided widening or increase of the pelvic diameter towards the close of gestation. Dubois acknowledges the essential mobility of the pelvic bones by comparing them to the tarsal articulations, as being designed to prevent shock to the body in an upright position.

As to the *modus in quo* of its production, authors vary. Stoltz insisted that the unquestionable relaxation of the pelvic symphyses which sometimes takes place is almost always of a pathological origin, and that there is no adequate reason why it should be considered as a physiological condition pertinent to the puerperal state, and designed to facilitate parturition by permitting of distention and enlargement of the pelvic canal.

Laborie is of the opinion that the pelvic symphyses must be regarded as allowing of movement *à priori*, in consequence of their structure; although their motion is hindered almost completely (except during pregnancy) by the rigidity of the sacro-iliac symphyses.

Luschka, in his researches on the imperfect joints of the human body, holds that the pelvic articulations are

not true symphyses, but more or less complete joints, with apposed faces, covered with cartilage, and provided with synovial membranes; and that in pregnancy these imperfect or half joints are greatly augmented in volume in consequence of a copious secretion of synovia (which at other times is only present in inconsiderable quantities)—the necessary consequence of which is a certain mobility of the pelvic bones. Severin Pineau made a dissection of a woman recently delivered in the presence of Ambrose Paré, and demonstrated the relaxation to the satisfaction of the latter.

Others think the inter-osseous substance acts like a piece of prepared sponge, which forces the bones apart by absorbing fluids at this period. Others again imagine it to resemble the roots of the ivy, which by insinuating its fibres between the stones of a wall or building end by overturning it; others, that the cartilages act like dry, porous wooden wedges, which force the bones apart by their swelling, or make a place for themselves by development, as in the case of polypi in the nasal fossæ or frontal or maxillary sinuses.

Lenoir says that a slight degree of this relaxation is due simply to serous infiltration of the pelvic ligaments resulting from the pregnant condition.

Dr. Martinelli, in a paper read before the Imperial Academy of Medicine in February, 1867, maintained the following propositions, viz.:—

That the different parts of the female pelvis were movable in a high degree during pregnancy and labor, and that this mobility is not fortuitous, but an indispensable condition of child-birth; that the peculiar in-

sertion and arrangement of the abdominal muscles acts with a powerful leverage to bring about the movement of the pelvic bones, and that it is further favored by the smaller extent of the articulating surfaces in woman and the general ramollissement of the ligaments at the period of child-birth. Such muscles he considers the rectus abdominis and obliquus externus abdominis and the four abductors of the thigh.

According to Baudeloque, however, this relaxation may actually retard labor by destroying the *point d'appui* which the abdominal muscles derive from the bones of the pelvis; and perhaps, also, the unusual distress occasioned by the engagement of the head forces the woman to restrain the pains as much as possible. It will be seen further on, however, that, on the other hand, in small or osteomalacious pelves, labor may be rendered easier and a spontaneous delivery take place, which but for this relaxation would have been utterly impossible. This separation has been known by Luschka, Morgagni, and Hunter, to reach an inch and more.

Matthews Duncan (in his late work, entitled "Researches in Obstetrics") says, that these changes in the pelvis towards the end of gestation are beautifully exemplified in the lower animals, in many of whom they are found to a much greater extent than in the human female; as, for instance, in the guinea pig, in whom the pubic symphysis gives to the extent of an inch or even more.

In the cow, whose pubic symphysis is ossified, there takes place a remarkable change, demonstrated by Professor Barlow, of the Veterinary College, viz.: a great

increase in volume and a relaxation of the sacro-sciatic ligaments, rendering them slack and yielding; and the sacro-iliac joints, which are described in the unimpregnated animal as secured by a substance resembling intervertebral substance, now have the opposing surfaces smooth and lubricated. By this means the ilii become extensively movable upon the sacrum (or *vice versâ*), in an antero-posterior direction. The final result of these changes is to enlarge the genital passages in the animal.

Mr. Zaglass, in 1851 (*Monthly Journal of Medical Science*, September, 1851), demonstrated the distinct motion of the ossa innominata in an antero-posterior direction in the human subject.

This softening, relaxation, or ramollissement, however, does not as yet constitute a pathological condition, but probably forms a part of the general preparation for the parturient act, taking place throughout the system of the woman, of the same nature as the marked relaxation of the vulva and vagina at term. A natural explanation, therefore, of the occurrence of separation would be that the bones in the relaxed condition of the ligaments are forced asunder by the impact of the foetal head; and Ulsamer actually thus accounts for it.

But what are we to say to those cases occurring after abortion, when the child's head can hardly have much concern in producing the rupture, and still more in those cases occurring during the seventh and eighth months of gestation, before the child has been born at all?

As we have seen, many authors speak of a constitu-

tional diathesis, or cachexia, as the principal cause of the affection; but Debout found that, out of nineteen cases, nine occurred in robust individuals. Others have accused abdominal plethora, and the pressure of an unusually enlarged and heavy uterus, as a determining cause; and again great physical weakness or prostration.

Churchill speaks of diminished firmness of the symphysis pubis as associated with morbid irritability of the neck of the bladder during pregnancy, which irritability often spreads as far as the vulva. But as such conditions may be regarded as common in all pregnancies, and as the occurrence of relaxation to the extent of actual separation between the bones is rare, they can scarcely be regarded as *causes*, although they may be *characteristic concomitants* of the disease.

I think it is not forcing a conclusion to regard it as proven from what has been advanced that an uncertain, varying degree of relaxation or ramollissement does obtain in a very large number of cases, in the pregnant and puerperal condition, of a physiological and benign character, and entirely consistent with health, and that it is to the excess alone of this condition that the pathological results above described are due. The ligaments become saturated with serum and lose their firm and resilient qualities; the synovia is greatly increased and presses the bones asunder; the pelvis becomes incapable of sustaining the weight of the body, and so gradually yields to the weight above; or some slight and insignificant movement of the patient suffices to precipitate the whole train of symptoms suddenly and at once. I am convinced that more such cases

occur than is generally believed. There are so many distressing sensations incident to the lying-in state, that if the affection be but slight and non-persistent it is most natural to attribute it to the puerperal condition, or to some uterine displacement or irritation. Women themselves are so accustomed to vague pelvic and uterine and lumbar pains, that they almost regard them as a natural heritage, and themselves assist in deceiving the physician by ascribing them to the uterine system.

Although the first symptoms frequently become apparent only after delivery, they also often occur during pregnancy and abortion; of which Courot and Hodge both give instances. If occurring during pregnancy, it may follow some unusual exertion, but such is by no means a necessary antecedent. In such case it occurs suddenly, and all its peculiar symptoms are at once developed, as is also the case when it occurs after delivery.

To determine whether separation has occurred, we may, by flexion and extension of the thigh with the hand of the physician, placed over the symphysis pubis, feel the pubic bones moving up and down under the hand, but without crepitation. The same result is perceptible on laying the hand upon the hip-bone, when that is affected. Jacquemier has caused by dragging upon the thighs a sensible sinking down of the os ileum. In one of Trousseau's cases, the end of the finger could be laid in the space between the pubic bones in the softened condition of the inter-articular fibro-cartilage, and this has often occurred in other cases.

Erichsen speaks of change in the form of the hip-bone taking place, and in the length of the limbs, when the relaxation was of one sacro-iliac symphysis alone. He thinks that the antero-superior spinous process of the diseased side stands lower and flares more than the opposite side, because of the swelling of the diseased joint, by which the ilium is forced outwards and forwards.

The pains bear no relation to the extent of mobility of the symphyses, but in the worst cases known the patient can neither stand nor walk, and the disease is complicated with paraplegia.

To recognize the mobility of the sacro-iliac symphysis, one should embrace the pelvis with both hands and allow the patient to walk alone or with a support. One feels at each step that the os ileum at the side on which the trunk rests plainly rises, while the other is apparently lower.

But, as has been said before, in all these cases it is more than easy to be deceived, as the patients on being questioned are rarely able to define clearly the seat of their sufferings, and the real affection is overlooked if care be not taken to make a direct examination. How often is the uterus regarded as the source of the pain, when the lesion is precisely located in the pelvic articulations.

As to the termination of the disease, in slight cases a few weeks is sufficient to effect a cure; and even without its being recognized, indeed, it being confounded with the general condition pertaining to the lying-in state; but in some cases it may endure for many years;

according to Debout, in two cases respectively for seventeen and fifty years.

The most favorable period as regards recovery is pregnancy and the puerperal state. Light cases consolidate of themselves during complete rest. In severe cases Martin's girdle may be used for circular compression of the pelvis. It consists of a very solid metal ring surrounding the whole pelvis. The spring is an inch and a third broad, padded in the same manner as a truss, both branches or arms of which are directed forwards and downwards, where they are fastened firmly by a buckle. The apparatus can also be worn during pregnancy without interfering with the enlargement of the womb and belly. In cases where Martin's girdle, however, causes discomfort or is too heavy, I would suggest the use of a strong sole-leather apparatus, properly *moulded* to adjust itself to the shape, and secured in the same manner as Martin's apparatus. It will be found lighter and quite as firm, if properly constructed. By the later use of the girdle, for instance, even more than one year after delivery, a cure may be effected, but it is sounder policy to have recourse to it at as early a period as the disease may be recognized. If the disease should, in spite of the wearing of the girdle, last many years, still, *with it* the patient has the power of walking, which, without it, would be utterly impossible. Griffiths recommended cold vaginal injections, cold baths, cold douches, vesication and stimulating frictions. Rest and the recumbent position, however, are the most efficient aids to recovery, if not carried to such an extent as to damage the general health of the patient.

Going up and down stairs is eminently unfavorable, and it is desirable to have the patient's apartments upon the first floor, if possible, so that, if her social condition be such as to enable her to avail of it, she may have carriage exercise without detriment, and in any event will not be obliged to ascend to her sleeping apartment.

But this is not the only diseased condition of the pelvic articulations incident to pregnancy, nor by any means the gravest. *Suppurative inflammation*, with its attendant dangers, frequently sets in and carries off the patient in spite of all that care or skill can do, after the most protracted and agonizing suffering—and furthermore (what would seem at a first glance an actual impossibility), *rupture* of the symphyses may take place as a crowning result.

The first of these, viz., suppurative inflammation, has been treated of by Hiller, Monod, Danyau, Hayn, and others. It may arise either before or after labor, as in the case of simple relaxation, and its earlier symptoms are very similar; viz., pain in the symphyses of varying degree, greatly aggravated by movement and sometimes intermittent; crawling and pricking, and occasionally numbness in the lower extremities, and tottering and uncertain gait. The gait varies according to the part affected; and in one case a woman could only walk with bent knees dragging the feet over the floor, without the ability to raise them in the least.

When the pubic symphysis is the point affected, dysuria is apt to be present; and where the sacro-iliac symphyses are the seat of inflammation there is tenesmus and pruritus, especially during defecation. On the

occurrence of suppuration the symptoms assume a gravity which should put the accoucheur on his guard. Fever, followed by rigors, sets in, the patient's countenance is expressive of anxiety, the tongue becomes furred and the bowels confined, together with the other symptoms of the inflammatory condition. The case assumes, in fact, the aspect which is peculiar to suppurative inflammation in the cavity of a joint; and of course the prognosis is eminently unfavorable. Death may indeed occur before suppuration sets in, but if this occur, extensive abscesses are formed in various parts. If it be the pubic symphysis which is affected, pus forms about the mons veneris, and burrows along the vagina and down into the thighs. If of the posterior symphyses, of which the right is more often affected than the left, it may cause purulent collections in five different places; viz., directly upon the joint, in the gluteal region, in the lumbar region, in the pelvic sub-peritoneal pouch, and, lastly, near the rectum, whence it may spread to the gluteal region, to the greater trochanter, or to the horizontal ramus of the pubes. Caries of the bones may take place, and it then runs a tedious course, and then invariably ends in death. Ankylosis seldom takes place. The cartilages are loosened, and the soft parts infiltrated with serum, pus, and ichor.

Its diagnosis is not difficult. In distinguishing between it and simple relaxation, it should be borne in mind that, in consequence of the inflamed condition of the symphyses, the difficulty of walking stands in direct relation to the intensity of the pains, and that in general the patient has more control over the lower limbs,

in consequence of the bones being still held in place by the inflamed cartilages ; and especially does this hold good when the inflammation is confined to one symphysis alone. The vaginal touch, the imposition of the hand upon the affected points during movement of the patient, and the probe after the evacuation of abscesses, will be found sufficient to establish a diagnosis.

The treatment should be directed primarily against the inflammation and the collection of pus, and rest enjoined in the recumbent position. After the subsidence of the inflammation, a pelvic bandage should be worn for a lengthened period.

In slight cases the affection may be so insignificant as to be confounded with the general results and inconveniences of the lying-in state, and attract no particular attention, and pass off with rest and quiet. In others it may be so severe as to call for some treatment, though generally it is not even then that its true nature is recognized, as the patient recovers after a few weeks of discomfort and confinement. But treatment should be prompt and decided even in these cases, lest there should ensue the deplorable results detailed below.

The following instructive cases are published by Dr. E. Schmiedt, and are drawn from various sources. The two first are by Trousseau.

One was a woman, forty years of age, who was seized, seven weeks before labor, with pains in the pelvis. At the commencement of labor she was attacked with fever and an intermittent pain in the right hip joint. An abscess soon formed in the gluteal region, and by an exploratory incision in the region of the

right sacro-iliac symphysis several drops of greenish putrid pus were evacuated. The patient soon left the hospital, and nothing more was heard of her. The second case was that of a woman, delivered five days previously, who felt a pain in her right hip, was unable to walk, and had chills and fever. The pains extended themselves to the nates and symphysis pubis. Four months after, fluctuation was detected over both sacro-iliac symphyses, from which a large amount of pus was evacuated on opening it. After some days death ensued, and the *sectio cadaveris* showed both sacro-iliac symphyses denuded of cartilage; and in the symphysis pubis, which contained pus, the cartilages were loosened. No metastatic abscess or other changes were found in any other part. Hayn relates two cases. One, a woman 29 years of age, had had two successful deliveries, the last one being a triple birth, and the children small. On the third day after labor, pains occurred in all three pelvic symphyses, particularly the right sacro-iliac symphysis. Pressure on either side caused pains in the corresponding symphysis as far as the pubic symphysis. Active movement of the extremities was impossible, passive motion painful. There was present, also, a severe diarrhœa. On the seventh day there appeared a swelling on the back of the right hand. By powerful pressure upon the right side of the pelvis a rubbing or friction noise was apparent. She died on the tenth day. On examination pus was found in all the symphyses, especially in the right one. Also, a woman forty years of age, in the first day of her second confinement, after a successful delivery, was seized with pains

in the pelvis. On the sixteenth day severer pains in the symphysis pubis occurred, radiating towards the thighs. After four days the attack passed off.

Dr. Galvagni had the opportunity of observing two cases of inflammation of the right sacro-iliac symphysis, in one of which death ensued from chronic miliary tuberculosis, and in the other from metastatic metro-phlebitis.

Case 1.—A woman, A. P., aged twenty years, who had menstruated at fifteen years, had been troubled for some years with pains in the knees and a lameness resulting therefrom, and with an inguinal hernia of some standing. In her nineteenth year she had married, and soon became pregnant, and in the commencement had progressed very well. About the middle of the pregnancy she found herself fatigued after slight labor, and had pains in the sacrum and general malaise, and her walk soon became uncertain. On the 2d of December, 1866, she was delivered of a well-formed, though somewhat thin, full-term child. On the 8th the author found her out of bed, but she complained of pains in the sacrum, and walking was difficult, and particularly painful when she rested her weight on her right hip. One month later he found her much emaciated, without appetite, with a dry cough, and nightly perspirations, from which he inferred the occurrence of tuberculization, although the physical examination gave no support to the idea. On the right sacro-iliac symphysis there existed a circumscribed painful point; the lameness upon the right side was very marked, and the patient was obliged to support herself with a cane.

When the author saw the patient again, at the end of two months, he found her in a very critical condition, the apex of the left lung being gone, and the woman evidently in the last stage of consumption. From the vagina there flowed a yellowish green pus, which soiled her clothing. Over the right posterior symphysis there was discovered a small fluctuating swelling. Nevertheless, the patient was sitting up out of her bed the greater part of the day. The inflammation of the symphysis was now beyond question a matter of certainty.

During the next week, to the astonishment of the relator, the abscess became dissipated, the fever alternated with rigors, shiverings, and prostration, alternating with restlessness, until, after fourteen days, on the 24th of May, 1867, the patient succumbed.

On opening the thoracic cavity the right lung was found extensively adherent, containing several cavities of the size of a nut, and infiltrated with miliary tubercle. Tubercle also studded the peritoneum.

The whole generative apparatus was deeply injected; the Fallopian tubes indurated, the fimbriæ contracted, the os uteri livid, denuded of epithelium and in a fungoid condition. The inner surface of the cavity of the uterus was covered with a yellow caseous, adherent pus, which also filled the Fallopian tubes. In the pelvic cavity there was found on raising the peritoneal investment a sinus from three to four millimetres corresponding to the right sacro-iliac symphysis, and so great was the disorganization that the bones were only held together by the strong ileo-lumbar ligament, all

other ligaments being destroyed by suppuration. Pus in moderate quantity was found beneath the periosteum, and had denuded by its action two strips on the sacrum and ileum. These strips were nearly one centimetre wide, parallel, and extended over the three upper sacral vertebræ, which showed their bony surfaces roughened. The abscess extended itself along the hypogastric fossa, and along the pyramidalis at the sacro-sciatic notch, and following the ischiatic nerve, terminated in the gluteal region, without having formed any perceptible external swelling.

The external abscess, which had been visible during life, had become larger, and lay under the aponeurosis of the greater dorsal muscles—the *sacro-lumbaris* and *longissimus dorsi*; it was connected by three conduits or channels piercing through the *multifidus spinæ*, and connected with the diseased symphysis and both the intervertebral spaces of the sacrum. Deeper and more externally along the ileo-sacral ligament, which alone was unimpaired, there was a very small abscess extending from the symphysis. All these abscesses were lined with a pyogenic membrane. Their contents were very thick and caseous, and displayed under the microscope pus-cells resembling those which were found in the uterus and Fallopian tubes. The cotyloid cavity and head of the thigh-bone were denuded by the action of inflammation.

Case 2.—E. G., twenty years of age, of a delicate constitution, had suffered in youth from rachitis, the traces of which were still discernible in the form of

her bones. For many years she had been obliged to move partly by sliding herself along, and partly by aid of crutches; later she had been affected with miliaria and acute inflammatory rheumatism. Menstruation appeared in the fourteenth year, returning regularly. After a normal course of pregnancy, labor set in the 28th of October, 1863. The attending physician, after accomplishing turning, could not extend the head; so on the 29th the laboring woman was brought to the lying-in clinic with the lower portion of the dead child hanging out between her thighs, to ascertain whether the delivery could be accomplished by craniotomy, which was successfully done. On the next day the great volume and tenderness of the uterus was remarked, and treated by blood-letting. The lochia remained normal at first; the bowels were constipated. From the 3d of November there were severe pains in the hypogastrium, the abdomen swelled, the meteorismus occasioned considerable difficulty of breathing, the pulse rose to 120, and the heat of skin was greatly augmented. Under antiphlogistic treatment the fever had decreased again on the 9th. There was pain in the right knee and a painful swelling on the anterior aspect of the right forearm. On the fifteenth there appeared an abscess on the metacarpo-phalangeal joint of the little finger of the left hand. On this day the patient was seized with a shaking chill lasting one hour and a half, which was repeated on the 17th to a slight extent. On the 18th there occurred severe pains in the right sacro-iliac symphysis, which were increased by pressure and coughing. Quinine was administered. In the mean

time the abscess remained indolent, though increasing in size. On the 22d the pains in the symphysis had become much mitigated, although the fever and meteorismus had returned; a diarrhoea then set in, followed by pain and swelling in the right eye-ball, and sight was entirely lost. On the 30th of November there appeared on the upper lip small white blisters containing pus. She died on the first of December. On post-mortem examination there were found small abscesses in both lungs, the spleen was softened, the peritonæum unchanged, and the uterus reduced in size. On cutting into its walls, a single sac was found containing pus; under the raised peritoneal covering of the pelvis, in the region of the right posterior symphysis, a moderate collection of pus in the form of a small sinus. The other symphysis was sound.

The joint surfaces were not exposed, because the pelvis was to be preserved whole. The first described swelling contained pus. The direct pelvic admeasurement was two and two-thirds inches.

This paper has already reached such proportions that I feel I must refrain from touching upon the third condition mentioned; viz., rupture of the symphyses, of which I have the record of some eight cases. It usually occurs after a severe labor (instrumental or otherwise, as the case may be), and is caused by some disproportion between the foetal head and the pelvis of the mother, or in some cases by one of the forms of malpresentation. It generally takes place in osteo-malaceous or rachitic pelves where the conjugate diameter is great-

ly shortened. It may take place in either the pubic or sacro-iliac articulation, but its favorite seat is the right sacro-iliac. It has been known to involve two symphyses at once. Where the pubic symphysis is the seat of rupture, one of the cartilages is torn loose, leaving the end of the bone bare and exposed.

Other causes are said to be constitutional feebleness of the mother, great size of, or ossification of, the sutures of the foetal head, severity of the pains, cranial distortion, and the use of instruments.

When it occurs it is generally heard by the attendants and bystanders, and the woman is conscious of intense pain and a rending of the ligamentous fibres, and, as affecting the labor, is analogous to the results of symphyseotomy. Inflammation and suppuration set in with great rapidity, and are followed by a period of great danger to the patient, often ending in death.

[The subjoined remarks by Profs. Fordyce Barker and Isaac E. Taylor are from the minutes of the meeting, reported by Dr. Winslow.—ED.]

REMARKS BY PROFESSOR BARKER.

THIS is a subject of great importance, although barely alluded to by English writers for the last quarter of a century. By the ancients, and through the middle ages down to the present century, it was believed that this relaxation was a normal element in parturition; and it was this belief which suggested to Sigault the operation which was the occasion of so much excitement at the time, that of division of the symphysis pubis in cases of difficult labor. Sigault supposed that he was simply carrying out more completely the ordinary physiological process. But that his operation was based upon ignorance and misconception of the true mechanism of labor is shown by the fact that, as has

been demonstrated, it would require a separation of the pubic bones to the extent of at least an inch, to gain *one* or *two* lines in the antero-posterior diameter.

The paper of to-night has been very rich in reference to the foreign literature of this subject. I would say a word of the writers upon it in our own language, among whom Denman has given a very complete exposition of the affection, with details of some cases of great interest. He relates one where it was eight years before the patient recovered sufficiently firm union of the symphyses to enable her to walk. In the American edition of Denman, edited by Dr. Francis, there is a full note reporting a case in the practice of Dr. Wright Post of this city, and another of relaxation of the sacro-iliac symphyses from the practice of Dr. Hosack. Next to Denman, Burns gives the best discussion of the subject. Ryan also speaks of it. Miller, Rigby, Ramsbotham make no mention of the matter; and Tyler Smith, Cazeaux, Churchill, and Bedford give it but a cursory allusion.

It has been my fortune to see quite a number of these cases, some of them involving points which I have not seen mentioned by any writer. The first occurred at the very beginning of my practice. A lady in the eighth month of her first pregnancy had for several days great difficulty in walking, with severe pain in the pubic bones, till one day she fell while walking across her drawing-room. She supposed that she had caught her toe in the carpet. From that time up to her confinement, she could not walk or stand. After a very careful examination, I was unable to make out the diagnosis; and none of the authorities at my command threw any light on the question. I therefore called in consultation two quite prominent surgeons; and one of them diagnosticated fracture of the neck of the femur; the other, fracture of the ilium or ischium. I watched the case very anxiously, naturally expecting a difficult labor, and some untoward result; but, to my surprise, the labor, though a first one, proved brief and easy, with no abnormal symptoms. The patient passed through the puerperal condition with nothing to excite apprehension; yet on essaying to rise it was found that she was still wholly unable to bear her weight upon her limbs. Some six weeks after confinement, I got her out of bed, and carefully attempted to make her walk. A point which struck

me, and which I have never seen mentioned, was that she could stand with comparative ease resting upon either one leg or the other, but could not balance herself upon both legs at once. This of course convinced me that there was no fracture of the thigh-bone, and the fact that there was no difference in her ability to rest upon the two sides showed that there could be no fracture of the ilium or ischium. Led by this to examine the symphysis pubis, I thought there seemed to be an increase of the space between the pubic bones; and also that the cartilage between them seemed softer than natural. When I left the place, some four years afterwards, this patient was able to walk only with great difficulty, upon crutches. Three or four years later yet, she was much improved, though still compelled to use crutches. I am told that after the lapse of some fifteen years from that unfortunate pregnancy she has entirely recovered and walks perfectly well.

In hunting up my authorities with reference to this case, happening to turn to the anatomy of the pelvis in the first part of Denman's work, I found the key to the whole mystery. Since that time I have seen the affection in several other individuals; in one of whom, the wife of one of my colleagues, it has occurred in her last three pregnancies. As I before remarked, my observations have differed in some respects from those I have found recorded. In none of the cases I have seen has the relaxation of the symphyses been dependent in any degree whatever upon the process of parturition. But in all of them—and this fact may give a clue to the true pathology of the disease—the patients have had pelves very *broad* and capacious at the superior strait; and where I have seen them before confinement, the foetal head has lain very low in the pelvic cavity during the last month of gestation. It has seemed to me that the œdema and consequent laxity of the ligamentous tissues may be due to the mechanical obstruction of the venous trunks by the pressure of the *presenting part* or the foetal head. Again, in most of the cases, I have noticed after confinement pendulous belly, and great difficulty or impossibility of completely evacuating the bladder, doubtless due to over-distention during pregnancy, from the same mechanical cause which produces the œdema of the ligaments and of the lower extremities. The irritability of

the bladder, which, according to Churchill, as quoted by Dr. Snelling, is frequently attendant on these cases, is explainable by this retention of urine, and the mechanical *pressure on the urethra*.

To three of the cases I have seen, I was called in consultation. Nothing is more apt to damage the reputation of a young obstetrician than that a patient should fail to recover rapidly after child-birth, unless the obstacle to her recovery can be made perfectly clear. How unjustly a young man may often have to suffer from this cause may be seen from one of these three cases, which will serve as a type of all. A lady, in her third pregnancy, engaged to attend her a young physician in whom the family felt much interest and confidence. Both of her previous confinements had been favorable, under the charge of an old physician who had recently died. This third labor proved, to all appearance, perfectly normal, and the woman seemed to be recovering well, until she attempted to get out of bed, when she found that she could not stand. A week, two weeks passed, and the attempt was again made, with the same result. She not only could not stand, but the attempt caused severe pains in the pelvic bones. The case went on to, I think, about the eighth week after confinement, the patient with this exception perfectly well, when another gentleman was called in—a man much older and of more eminence as a surgeon than as an obstetrician. He discovered in the pelvis a hard tumor the size of a hen's egg, which he thought scybalous, as it proved to be. It was brought away by large injections, and an early cure was promised. The young man was severely blamed for neglect; but, unfortunately for his elder, the promised recovery did not take place. The surgeon treated the patient for some five weeks, with no perceptible change in her condition, when I was called in. A careful examination satisfied me that the case was one of pretty strongly marked relaxation of the symphysis pubis; but I reserved my opinion until the following day, when I insisted on seeing both the physicians together. Then, by following a hint given by Denman, taking with me a dry pelvis, I demonstrated what I believed to be the patient's condition, and called upon the older doctor to exonerate the younger from all blame. On both days I specially noted the patient's incapacity entirely to evacuate the bladder. After what she supposed a successful effort to do so,

I drew off, on the first occasion, about four ounces and a half of urine, and on the second about four ounces. I explained that this condition of the bladder was probably due, like the accumulation of scybala in the rectum, to the same cause which had produced the pubic relaxation. A binder was firmly placed about the patient's hips, and within a few weeks all trouble with the bladder had disappeared, but it was a year or so before she could walk with comfort.

Remarks by Prof. I. E. Taylor.

There is an American authority my friend Dr. Barker has omitted to name, who has made reference to the subject of relaxation and opening of the joints in the female pelvis during gestation—that is, Dr. Meigs. Dr. Meigs gave his full assent to the occurrence; while Roederer seems to have ignored it, and asserted that the head of the child could not by any means, even if it was large, produce any influence in enlarging the capacity of the pelvis, for the simple reason that the head of the child would be more readily moulded and compressed, than the articulations of the mother's pelvis would yield or open. His opinions, it appears, seem to have put a veto on the views that were entertained respecting the separation of the bones of the pelvis during labor. My own impression from some instances under observation is, and has been, that this relaxation or softening of the pelvic joints, and especially the pubic, is only a part of that great physiological process Nature institutes for delivery in the female economy during gestation—not confining itself to the changes in the body of the uterus and cervix, or the appendages. For we know that it has been manifested in the heart, and Coulson has remarked that the larger joints of the extremities have experienced this relaxing or softening influence.

It is conceded by many of the older obstetrical authorities that the soft tissues of the symphyses become infiltrated by a serous effusion; its structure and the capsules and the surrounding parts become enlarged, tender, and painful, and soft, and move easily one upon the other, covering each other in some instances. Boyer has asserted that they (the symphyses) have been opened as much as one-half an inch, Boivin to fully one inch. Meigs has borne testimony to the same result. In one of his cases, he has seen

it produce a crushing sound in a patient whenever she walked. In one of my patients the left knee could be partially luxated during gestation.

The anatomic structure of the symphysis pubis is somewhat different than the sacro-iliac symphyses,—the attachment of the tendon of the recti muscles to the pubic rami in the fibrous sheath—the infiltration surrounding the parts, extending to the bladder, the urethra and the vulva—creating the tenderness and sensibility and irritability of the bladder and the looseness of the joints.

This mobility and looseness is so perceptible in some cases, that if the patient attempts to stand up, if the right side is affected more than the left, the right ramus of the pubis will be elevated by the recti muscle of that side—if the left, the left ramus of the pubis—so with the sacro-iliac unions. This it is which produces the tottering or unsteady and uneven gait when trying to walk. Some patients have had a renewal of this softening or ramollissement of the symphyses in their pregnancies two or three times. I do not perceive, therefore, why these cases should not be common, equally as much in a physiological light, as the body of the uterus or its cervix, which is so much dwelt upon as a sign of pregnancy and as necessary in gestation. It is very apparent that this physiological state, as regards the uterus and its cervix, passes sometimes very rapidly, from various causes, into a pathological condition; so I conceive that the same view may be entertained regarding the symphyses of the pelvis during gestation.

Dr. Meigs has not found any benefit from the treatment by the bandage. I do not partake of this opinion, as I conceive it gives comfort, and aids in the adaptation of the joints to one another, and affords infinite pressure and strength, to the solution of an earlier restoration to a normal and healthy condition,—time and nature completing the cure by the physiological transformation again—as we know it does in the uterus itself after delivery.

ON THE ACID DYSPEPSIA OF INFANTS.

BY EUSTACE SMITH, M.D.,

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Acid dyspepsia is one of the commonest digestive derangements met with in young children, and few infants can be said to escape it altogether. A trifling complaint, and readily recovered from when attended to early and judiciously treated, if neglected it becomes a most serious and obstinate disorder, which may resist all treatment, and may lead to the most extreme emaciation, or even to death itself.

The food taken seems shortly after being swallowed to undergo an acid fermentation ; sour gases are evolved, great discomfort is produced, and nutrition is seriously interfered with. The derangement is usually caused by overfeeding with farinaceous foods. It is too commonly the case that these foods are given in enormous quantities—in quantities greater than any infant with ordinary digestive power can by any possibility assimilate. The reason of this reckless feeding is, partly, the mistaken notion which so universally prevails of the digestibility of these foods ; partly, the eagerness with which the child himself will swallow large masses of sop ; for the griping and flatulence occasioned by the presence of large masses of starchy matters in the alimentary canal will—if not too severe—excite a fictitious hunger which is not easily appeased. An infant of three or four months old, in whom the secretion of saliva is but lately established, or an infant of a yet earlier age, who

has no saliva at all, is often fed with a large table-spoonful of corn flour or other farinaceous powder, boiled with milk or with water, four, five, or even more times in the day. The food lies undigested in the bowels, ferments, and a state of acid indigestion is set up, which does not cease with the removal by vomiting and purging of the cause which has produced it. Even a return to a simpler diet is often insufficient by itself to put an end to the derangement; plain milk and water is vomited sour and curdled, and everything taken into the stomach seems to undergo the same acid change.

As this derangement is so easily excited by improper feeding, even in healthy infants, children whose strength has been already reduced by disease, and whose digestive power is therefore lowered in proportion to the weakness of the whole system, are still more likely to be affected by the same cause. On this account acid dyspepsia is a not unfrequent sequel of acute disease in infants, and may, after apparent convalescence from the primary disorder, lead to death by the interference with nutrition and by the exhaustion which it so often produces. The diarrhœa, which is a not uncommon sequence of some of the acute specific diseases, as scarlatina and measles, is often primarily excited by this derangement, and is too frequently a cause of death. Severe operations upon the child, such as that for stone in the bladder, may also be followed by the same complication, for anything which lowers the easily depressed general strength reduces also the digestive power and predisposes to this complaint.

Children brought up by hand are especially liable to

this acid dyspepsia, for even when fed upon a suitable diet, carelessness in the administration of the food selected, so that the stomach is overloaded by too frequent or too copious meals, or neglect of the necessary cleanliness, so that they are allowed to take milk which by being put into a sour bottle has already begun to change, will excite this indigestion. Amongst the poor of London, it is not uncommon to find a child brought for medical advice sucking at a feeding bottle, of which the intensely sour smell at once discloses the cause and suggests means for the relief of the complaint under which he is laboring.

The earliest symptoms of this derangement are due to the uneasiness produced by flatulent distention and griping pains. The infant is restless and fretful, whining and crying and refusing to be pacified. Large quantities of gas are evacuated both by the mouth and by the rectum, affording at first some relief, and the child becomes quieter until a reaccumulation takes place. At night the griping is exceedingly distressing, and his sleeplessness at this time, by the discomfort it occasions to his attendants, is usually the symptom which assumes the greatest prominence in the mind of the mother, and is the chief reason for applying for advice. The infant, after lying for a time in uneasy sleep, starting, twitching, moaning, frowning, and drawing up the corners of his mouth, suddenly wakes up with a loud cry and is seized with a fit of violent screaming which resists all efforts to calm him. He throws himself from side to side, jerks about his lower limbs, or suddenly straightening them out in a line with

his body, becomes for a few moments rigid as if turned into stone. These attacks of colic are sometimes so severe as to cause great alarm; the child falling into a state of collapse, or being thrown into convulsions, which may be repeated again and again. The ravenous appetite noticed in children suffering from flatulence has already been referred to. This symptom usually disappears as the derangement becomes more marked. Vomiting comes on after a time, the appetite then fails, and the child is thirsty and feverish. Vomiting is at first excited by taking food, but may afterwards occur when no food has been lately taken, and in bad cases may be caused by a sudden movement, or even by a touch, as in wiping the mouth. The vomited matters consist at first of food and curdled milk, afterwards of clear fluid like water; the smell is usually intensely sour. The bowels at first are confined, but after a time diarrhoea comes on, the motions being either pale, frothy, and sour-smelling, or watery and fetid. There may be straining during the passage of a stool, in which case the motions may contain streaks of blood. An eruption of red strophulus, covering the body and arms of the child, is a not uncommon symptom; it may be mixed with urticaria.

An infant suffering from this derangement soon becomes pale and thin. His face assumes a constant expression of fretfulness, which is increased by the furrow which appears, passing on each side from the nose, to encircle the corner of the mouth. The lower eyelid and upper lip are disposed to be livid; the lips twitch, and the corners of the mouth are frequently

drawn up, giving a peculiarly plaintive and helpless expression to the face. The fontanelle is depressed more or less deeply, according to the degree to which the strength is reduced. The eyes sometimes assume a fixed stare, while the muscles of the face twitch, and the thumbs are drawn inwards upon the palms of the hands. These nervous symptoms—well known to nurses by the name of inward fits—are of importance, as being sometimes the forerunners of convulsions. The tongue is at first covered with white fur, through which red papillæ project; afterwards it is apt to become pale and clean, or with little patches of fur scattered here and there over the dorsum. In bad cases the whole body has an offensively sour smell. This smell proceeds not only from the breath, but from acidity of all the secretions; the saliva, the perspiration, and the urine being all intensely acid. The cutaneous secretion is, however, seldom in excess; more usually the skin is dry, and is in consequence harsh and rough to the feel, especially at the backs of the arms and the belly. The feet are generally cold, and the child lies with the knees drawn up to the abdomen. The coldness of the feet is no doubt one cause of the griping pains which are so constant in this derangement, for even in healthy infants abdominal pains are frequently excited by coldness of the feet, and cease when these are warmed. During the earlier periods of this disorder the complexion turns slightly yellow from time to time, the yellow tint remaining for some hours or days. Occasionally the skin becomes completely jaundiced. After the complaint has existed for some time a peculiar earthy tint is noticed of the

face and whole body, which is very characteristic of chronic abdominal derangement.

If the disorder is primary, and is not soon arrested, a chronic catarrh of the stomach is often set up, the bowels becoming obstinately confined, and the vomiting continuing as a persistent condition. In other cases, again, the derangement may settle principally upon the bowels, leading to a chronic diarrhœa. The most extreme emaciation is often reached through these means, and it may be only after weeks, or even months, of illness that a termination, by recovery or by death, is arrived at.

When the disorder is secondary to some acute disease, or follows a serious operation, the strength is usually so much reduced by the original illness that the child, weakened more and more by the vomiting and diarrhœa, and by his inability to digest any nourishment whatever, soon becomes exhausted. Thrush appears upon the inside of the mouth, and the child sinks and dies. Pneumonia is a not uncommon complication in the later stages of the disease, and, if the strength be much reduced, may exist without manifesting its presence by any of the usual symptoms. There is no cough, and the heat of the body is not appreciably heightened, or if heightened at first the elevation of temperature soon passes off. This pneumonia usually attacks the bases of both lungs.

The earlier treatment is commenced in this derangement the more readily will the complaint be arrested, for as the strength becomes more and more reduced, and the stomach and bowels become more and more dis-

ordered, treatment which in an early stage would be at once attended by improvement loses much of its efficacy, and great difficulty is experienced in making any impression upon the disease.

When the case is seen early, and the symptoms complained of are merely griping and flatulence, with ravenous appetite, unaccompanied by sickness or diarrhoea, careful inquiry should at once be made into the diet and general management of the infant. It should be explained to the parents that the appetite will best be satisfied, not by increasing the quantity of farinaceous matter and the frequency of the meals, but by carefully adapting the food supplied, both in quality and quantity, to the digestive power of the child, so that the nourishment given may be only such as the stomach is able to digest. This may seem a simple and self-evident proposition, but it is one which is constantly forgotten. That a child will be nourished in exact proportion to the amount of food he swallows, and that the more solid the food the greater its nutritive power, are two articles of faith so firmly settled in the minds of many mothers that it is very difficult indeed to persuade them to the contrary. To them wasting in an infant merely suggests a larger supply of more solid food—every cry means hunger, and must be quieted by an additional meal. It is difficult to lay down precise rules for diet in every case of this derangement. This is a matter which can be properly learned only by experience. There are, however, certain plain rules which should always be observed. Of these one of the most important is, that farinaceous food is unsuitable to an

infant under the age of three months. Before that age he should be restricted entirely to the breast, supposing that the secretion of milk be of proper quality and be supplied in sufficient quantity. In cases, however, where additional food has to be given on account of the insufficient supply of breast-milk, recourse must be had to cow's milk, or to the milk of the ass. If cow's milk be used, it should be diluted with a third part of lime-water, in order to prevent the too firm coagulation of its casein. Even, however, when thus diluted and alkalized, the cow's milk is sometimes undigested by young infants, who seem to thrive better upon the milk prepared with a very small quantity of arrowroot or baked flour. This scarcely accords with the statement made above, of the unsuitability of such foods to young infants; but an explanation of the seeming contradiction is found in considering the action of the farinaceous food under such conditions. The arrowroot itself probably contributes little, if anything, to the nutrition of the body, but when thus intimately mixed with the cow's milk it has a mechanical action in separating the casein into minute portions. The curd, therefore, coagulates, not in one large clot, but in a multitude of small clots, which are more readily attacked by the digestive juices. It is, however, as has been said, always a risk to give farinaceous food to young infants, and the same object may be as readily effected, and without any danger to the child, by adding a small quantity of isinglass or common gelatine to the diluted milk in the proportion of one teaspoonful to four ounces.

In older children, brought up upon artificial food, the

above symptoms are often complained of even although the quality of the food with which they are supplied leaves nothing to be desired. In these cases it is the quantity which is in fault: the child is supplied with food largely in excess of his wants or his powers of digestion, and the stomach and bowels revolt against the burden imposed upon them. For an infant of six months old, one, or for a very robust child two, teaspoonfuls of farinaceous food, carefully prepared with milk, and given twice in the day, are as much starchy matter as he is able readily to digest. His other meals should be composed of milk and lime-water, or the milk and water with isinglass, as directed above.

The kind of farinaceous food is of some importance. Different foods vary very much in the proportion of their several constituents, and the albumen, gluten, salts, &c., they contain are to be considered quite as much as the starchy matter. The very best food is, perhaps, pure wheaten flour slowly baked in an oven till it crumbles into a light grayish powder. This, prepared with milk, and sweetened with milk sugar, forms an admirable morning and evening meal. It may be varied occasionally with other farinaceous articles, but whatever be the food selected, the quantity mentioned must not be exceeded. On alteration in the diet, in accordance with the above rules, a small dose of castor-oil, or rhubarb and soda, to clear out undigested matter from the bowels, and the administration of a little bicarbonate of soda or potash, with an aromatic to neutralize any remaining acidity and promote digestion, are all the measures that are required at this stage.

is supplied in small quantities. Any tendency to acid fermentation that may remain should be neutralized by five-grain doses of bicarbonate of soda, given three or four times a day, and the patient may be allowed to return very gradually to his ordinary diet.

When, however, the derangement is of long duration, or is secondary to a severe operation or to some acute disease, the symptoms are not so easily overcome. Here the weakness, as shown by the depressed fontanelle, will not allow very active measures to be employed, and therefore the accomplishment of our twofold object, viz., of removing already formed acid from the system, and of preventing further fermentation, requires the most careful management. Emetics are here out of the question, for the strength will not bear further reduction, and the administration of such a remedy would be attended by the greatest danger. Our first care should be to endeavor to restore the circulation to the extremities, by placing the feet as high as the knees in hot mustard and water. If the weakness be very great, the whole body may be immersed in a mustard bath as high as the neck. It is of extreme importance in such cases to restore the proper action of the skin, for it is by this means chiefly that we hope to effect the escape of acid from the system. On being removed from the bath the infant should be carefully dried; a hot linseed-meal poultice is then to be applied to the belly, and the child, well wrapped in flannel, must be returned to his cot. The warmth of the surface must be kept up by hot bottles placed by his sides, and the feet and legs should be well rubbed at intervals

with the hand alone, or with a liniment composed of equal parts of compound soap liniment and the compound liniment of camphor. If the child can bear the motion, frictions with the same embrocation may be used to the whole body; but in cases where the weakness is extreme and the vomiting obstinate, violent retching may be excited by the slightest movement, so that the frictions would have to be discontinued. In such cases the feet and legs should be wrapped in hot flannels on which some flour or mustard has been sprinkled, and the most perfect quiet should be enforced. A napkin must be placed under the chin, to receive all matters ejected from the stomach, and when moistened the cloth must be immediately removed and a clean one applied in its place.

If diarrhoea exist, astringents are not to be employed so long as a sour smell from the breath and evacuations indicates the continuance of fermentation in the stomach and bowels. For a child of a year old, twenty drops of castor-oil can be administered, and will be usually kept down. After its action a simple chalk mixture may be given, or a draught containing five grains of bicarbonate of soda, with three grains of nitrate of potash, in some aromatic water, three or four times in the day. Half a drop of tincture of capsicum is a valuable addition to each dose of this mixture.

If there be constipation, the bowels must be opened by an enema containing castor-oil, and be kept in regular action by the occasional administration, as required, of one or two drops of a solution of podophyllin in alcohol (a grain to the drachm),

or by suppositories of castile-soap placed in the rectum.

The form of nourishment to be given in these cases is of the utmost importance. All matters capable of undergoing fermentation must of course be excluded. Even milk itself, however diluted and alkalinized, can seldom be borne, as it is usually vomited sour and curdled immediately after being taken. Woman's milk is usually well digested, but not always. In some cases it seems to agree as little as the milk of the cow; in others, where the irritability of the stomach is very great, the mere movement of the mouth in the act of sucking may be sufficient to excite a return of the vomiting. If this be found to occur, the breast-milk should be given with a teaspoon. In cases where a return to the breast is impracticable, or is not followed by the expected improvement, a good food is whey, made fresh as required by adding prepared rennet to cow's milk in the proportion of a teaspoonful to the pint. To two tablespoonfuls of the whey add one tablespoonful of fresh cream, and dilute with two tablespoonfuls of hot water. Of this food small quantities can be given at regular intervals, and care must be taken that it be either hot or cold, but not tepid, as liquid food given in a lukewarm state would be apt to favor a return of the vomiting. Liebig's food for infants, carefully prepared with freely diluted cow's milk, will often be borne; but in very bad cases it is inferior to the diet just described. In addition, the waning powers of life must be supported by five-drop doses of pale brandy, given in a teaspoonful of

the food every hour, or even oftener, according to the condition of the fontanelle.

By such measures success is often attained even in the very worst cases of this derangement. The obstinate vomiting is best arrested not by sedatives, but by giving the stomach as much rest as is consistent with supporting nutrition. Of all special drugs, calomel in doses of one-eighth or one-sixth grain, laid dry on the infant's tongue, is perhaps the one which is the most generally successful; but our chief reliance should be placed on a careful diet, and on stimulating and hot applications, so as to promote the circulation and encourage the free action of the skin. The existence of cold feet alone would be a sufficient obstacle to the success of any treatment whatever.

ON CHRONIC METRITIS IN ITS RELATION TO MALIGNANT
DISEASE OF THE UTERUS.

BY E. NOEGGERATH, M.D., ETC.

(Continued from page 515, Vol. 2, No. 3.)

CASE II.—Mrs. S——, thirty-nine years old, was married twenty-one years ago. During that time she had given birth to eleven full-grown children. After her tenth confinement, she first began to suffer from back-ache, fluor albus, and other symptoms of uterine disease, not, however, severe enough to call for medical interference. Her last child was born five years ago, after a

very protracted labor. She made a pretty slow recovery, and when her menses returned three months later they were so profuse that she had to be treated energetically to stop the hemorrhage. Ever since that time her former ailments increased in severity, backache, bearing-down sensations and leucorrhœa becoming so annoying, that Mrs. S. at last felt the necessity of applying to a prominent gynecologist in Europe for advice. She therefore consulted Prof. Scanzoni, of Wuerzburg, who expressed his opinion that she was suffering from chronic metritis, and advised her to go through a course of treatment at the mineral springs of Kissingen. It appeared, however, that she did not derive the least benefit from their use. Having returned to New York, and not feeling any better, she applied to her family physician, who put her under a course of topical applications.

In the early part of January, 1868, I was called in to attend Mrs. S., who, instead of finding relief from the treatment, had been growing worse during the fall and winter of 1867. Notwithstanding the intense suffering she had been undergoing occasionally, Mrs. S. looked the picture of health, being stout and robust. On inquiring into the peculiarities of her history, I learned, besides the facts mentioned above, that her principal complaint was a very intense infra-mammary pain on the left side, which occasionally was associated with a sensation of nausea and sickness of the stomach. There existed, further, an intense headache on top of the head, which place was occasionally swollen and apparently hot and pulsating. The most severe attacks of headache usually followed a digital examination of the

womb. She also complained of very severe back-ache, and very profuse white discharges; the menses always appeared too soon, and were copious, the amount of flow having increased considerably during the last two months. An examination of the parts involved gave the following results: both lips of the uterus considerably enlarged in all the diameters, very tender to the touch, and indurated; not, however, hardened equally in all directions, some portions feeling more succulent than others. From the inner surface of both lips granulations of considerable size were observed to arise, while in some points the tissue appeared to be exulcerated. The body of the womb arose considerably above the symphysis pubis, enlarged and indurated, very tender on being touched. On examining with the speculum, it was found that the mucous membrane around the os uteri was very much congested, and covered with numerous granulations and deep erosions, while the rest of the vaginal covering of the neck looked rather pale and anæmic.

I came to the conclusion that Mrs. S. was suffering from chronic metritis complicated with some affection of the cervical mucous membrane, the nature of which was not yet clearly defined. I therefore concluded to wait for future developments before deciding as to the plan of treatment. I saw the patient about once a week from the beginning of January up to the end of February. The changes which occurred during this time were the following: The larger granulations located in the central portion of both anterior and posterior lip increased in size, coalesced, assumed a yellowish hue, ex-

tended into the depth of the normal tissue, and at last formed separate tumors of the size of a pea, covered with a smooth lining membrane. While, however, these sections began to develop, other parts of the mucous membrane around the os became excoriated, until at last they formed irregular, deep exulcerations. At the same time, fresh, soft granulations began to shoot up from within the upper section of the cervical canal, into which the finger could at last be easily introduced to a considerable distance. Thus I came to the conclusion that I had to deal with a new formation of tissue, which had the tendency towards rapid retrogressive metamorphosis.

By the end of February I called in the attending physician for consultation, who had not the least difficulty in confirming my view of the case, inasmuch as he found that the state of things had undergone considerable alteration since his last examination in August, 1867. We therefore concluded to have the neck removed by an operation, which was done on the 3d of March, 1868, with the assistance of Dr. Thomas and Dr. Henschel.

The neck having been slit open in two pieces by lateral incisions, both lips were removed by a pair of scissors, up to the vaginal insertion. On examining the wound, it was found that part of the centre of the posterior lip looked unhealthy, while the cut surface corresponding with the anterior lip presented a normal appearance. To this diseased portion we applied the heated iron thoroughly.

Although the wound appeared to be very large, after

the operation the bleeding was so trifling that we abstained from cauterizing the entire surface, but applied cotton soaked in liq. ferri subsulphatis to the wound, and plugged the vagina thoroughly. An hour afterwards, however, I was summoned in haste, and found the patient in imminent danger from loss of blood, the tampon having been expelled. Another more thorough plugging of the vagina was resorted to, but the efforts at expulsion were so intense that even this second plug could be retained with difficulty. A few large doses of opium, however, administered per rectum, at last controlled the vaginal contractions. The patient made a very slow recovery, partly on account of the loss of blood, partly from the reaction which followed the operation. The microscopical examination of the tissue of both lips revealed the existence of epithelioma in an early stage of development. On the 27th of March the wound was examined, and while the anterior lip appeared in a very fair process of healing, the posterior one, especially that part to which the actual cautery had to be applied, showed pale fungous granulations of considerable size. They were touched with sulphuric acid at first once a week, and afterwards at greater intervals.

During my absence in Europe the patient was under the treatment of Dr. Thomas, who made two or three other cauterizations.

In the course of last winter, both anterior and posterior lips began to undergo a process of involution, and the latter became atrophied to such a degree that there was hardly any tissue left between the mouth of the womb and the posterior wall of the vagina.

The body of the womb was also found smaller in all its diameters.

Mrs. S. went to Europe last May, partly to invigorate her health, and principally urged by her relatives to have the opinion of one of the leading authorities with regard to her case. Prof. Veit, of Bonn, examined her last week, and pronounced her condition very satisfactory—one year and eight months after the operation.

CASE III.—Mrs. H——, thirty years old, a tall, stout, healthy woman, was first attended by me about ten years ago for a miscarriage at the third month of gestation. This, her first confinement, occurred soon after her marriage. She flooded considerably at that time, and made a slow recovery. Six months afterwards she had another abortion of about two months. She now began to suffer from symptoms of chronic metritis, and was treated and benefited by the means usually employed under these circumstances. She became pregnant again, and gave birth to a full-grown female child about eight years ago. After this childbed she had a slight attack of endometritis; six months afterwards she had a third miscarriage. Her fourth child was carried up to the full term. During the latter months of gestation she suffered a great deal from abdominal pains, which were occasionally severe enough to threaten premature delivery. Labor was terminated by the forceps on account of spasmodic pains. After this she had a fourth miscarriage. Three years ago she was delivered by forceps of a third living child after she had been suffering for two months from symptoms of uterine inflammation,

and when the child was born an acute attack of metro-peritonitis confined her to bed for several weeks. The last child was born two years ago, and she again suffered a great deal during the latter months of this gestation.

Her menses during most of the time had not been very profuse, but accompanied with backache and pain in the lower part of her stomach. On several occasions when she was examined it was found that there existed chronic parenchymatous metritis. The neck was considerably thickened, indurated, and anæmic; the mucous membrane surrounding the os covered with granulations. Ever since the month of May, 1868, the menstrual flow began to increase in quantity with every succeeding period. During August and October the discharge became so abundant as to produce general prostration. At that time she began to suffer from intense headache on top of the head; she had occasional chills, and began to lose flesh; profuse sero-mucous leucorrhœa. Mrs. H. called on me on the 6th of January, 1869, with the view to find out what was the cause of this new train of symptoms. I therefore made a careful examination, and found the following condition of things: There existed the old chronic metritis; the uterus enlarged about an inch and a half over its normal size; the body as well as the cervix considerably thickened and hardened, very painful on being touched. The small superficial granulating surface was transformed into an extensive ulceration, covering both the anterior and posterior lip. By the touch it could be further ascertained that there existed irregular tubercu-

lar elevations starting from the anterior aspect of the os uteri and spreading over the extent of most of the anterior lip. Near the right angle of the os there was a pretty deep irregular loss of substance, with shaggy edges; the posterior lip was covered by a very extensive highly colored granulating ulceration. The neck being exposed by the speculum, the afore-named elevations could be perceived even more distinctly; they consisted of a yellowish velvety tissue which was sprouting in all directions over the anterior lip, and within this morbid tissue there existed a deep ulcer, which was covered by a grayish-white surface. Part of this newly formed granulating matter was removed by the scissors, for the purpose of subjecting it to a microscopical examination, when it was found to be formed of elements constituting papillary epithelioma.

The question now arose whether amputation of the neck ought to be resorted to at once, or whether a short time could be allowed to a trial with the application of caustic remedies. Considering the fact that the disease was of an evidently malignant character, the more radical proceeding would have been justified; but inasmuch as the affection was in its very first stage of development, and even so little pronounced in its character as to make the diagnosis impossible without the aid of the microscope, it was deemed advisable to allow a short time for the use of caustics.

With this view I began to touch the anterior lip with monochloracetic acid, a remedy which has come into use of late for the purpose of destroying warty, condylomatous, and papillary growths. The applica-

tions could be made in my office, since they were not painful, and the patient was able to ride home a considerable distance. These were made once a week, and soon leucorrhœa, headache, and menorrhagia disappeared. They were persevered in up to the middle of April, when it was found that the entire anterior lip was covered by a healthy looking mucous membrane. The ulceration on the posterior lip was touched with the liquor ferri subsulphatis, and was also in a fair state of regeneration, so that the patient could be allowed to sail for Europe, with this precaution, however,—to call on a well-known gynecologist, to whom I gave her a letter of introduction, in order to be under medical surveillance for at least twelve or eighteen months.

CASE IV.—Mrs. S., of Brooklyn, midwife, forty-one years old, a mother of five children, has always enjoyed a pretty fair state of health. She is a tall, fleshy woman, who, according to her own assertion, had been suffering from chronic metritis about ten years ago, after her last confinement, and been so much benefited by treatment that she felt very little uneasiness ever since that time. The menses have never been profuse, and there existed very slight leucorrhœa. In the month of June, 1867, she was suddenly taken with severe menorrhagia; after this, menstruation ceased to appear for the next five weeks, when it set in again very profusely, lasting for about three weeks. The periodical discharges of blood returned now every three weeks, and lasted for twelve days.

On the 9th of March, 1869, her attending phy-

sician, Dr. Stub, of Brooklyn, brought her to my office in order to have my opinion as to the cause of the hemorrhage. On examining I found the cervix very much enlarged, and indurated throughout its tissue. On the anterior lip there existed a protruding ridge of hardened tissue running in a line with the long axis of the canal, and corresponding with it two shallow furrows, one on each side, which again were lined by two longitudinal elevations. From the right angle of the os uteri there protruded a number of pedunculated granulations, to the size of a lentil. One of these was taken away with the scissors and examined at once under the microscope, when it was found to be true epithelioma. The posterior lip also exhibited numerous granulations, with deep fissures intervening. The entire tissue appeared to be very much congested, and bleeding on being slightly touched. By means of the probal touch the body of the uterus could be felt above the symphysis pubis as a hard round mass, and the entire organ was found to be enlarged to such an extent that the sound could be passed four inches into its cavity. On the 12th of March, the entire neck was cut away by the scissors close up to the vaginal insertion, and the wound left open to heal by granulation.

The treatment after the operation was conducted with no ordinary amount of skill by Dr. Stub, to whose unremitting energy the control of the reaction following immediately after the operation, and of the hemorrhages occurring at a later period, are principally due. I have seen the patient at intervals of from four to

six weeks, and for the last time on the 28th of September. No trace of the epithelioma is left, the wound covered with a smooth shining membrane, but the induration of the body and supra-vaginal part of the neck has not disappeared. Chronic interstitial metritis exists, without, however, giving rise to any disagreeable symptoms. The menses appear pretty regularly, and last but four or five days.

CASE V.—Mrs. Helena Faust, a dispensary patient, twenty-six years old, was healthy up to her marriage, which took place six years ago, and during that time she gave birth to six children.

She had puerperal fever, with symptoms of inflammation of the generative organs, after her first child. Ever since that time she began to suffer from uterine disease, and has never been entirely well.

Three months later she became pregnant with her second child, during which period she suffered a great deal from abdominal pains. After delivery of this, as well as of the third child, she had an attack of puerperal fever.

When two months gone with her fourth child, she was taken with severe flooding, but did not miscarry. These hemorrhages continued up to the sixth month, when the foetus came away. She was treated during that time by Dr. Schnetter, who recognized the existence of a tumor invading the neck of the uterus as the cause of the bleeding. With her fifth child she reached the full term of gestation, although bleeding most of the time. During the sixth pregnancy she felt comparatively well, but when the child was born

she had another severe attack of inflammation of the uterus and appendages. This occurred about a year before I first saw the patient. Ever since this last confinement she has been suffering severely from back-ache, abdominal pains, and profuse mucous leucorrhœa. The menses appeared every two weeks, and she has been bleeding without intermission for the last ten weeks. On examining the uterus I found both body and neck hardened and greatly increased in size, the latter covered with numerous small and large outgrowths which bled on the slightest touch. On examining with the speculum these excrescences were seen to be distributed all over the surface of both anterior and posterior lips, and to have very much the shape of ivy-leaves. The secretion had as yet a decidedly mucous character, and the uterus, although impaired in its mobility, could not be pronounced fixed by adhesions.

On November the 25th, 1866, the neck was amputated with the scissors, and the hemorrhage, which was considerable, arrested by means of the actual cautery.

The patient suffered very little after the operation, and was soon out of bed.

The specimen thus removed was presented to the New York Obstetrical Society, and acknowledged to be the incipient stage of a true Clark's cauliflower excrescence, a simple hypertrophy of the vascular papillæ of the neck, as yet uncomplicated with epithelioma. I had occasion to examine the patient two years after the operation, when the stump was found to be covered with a smooth, healthy membrane.

I have thought it necessary, even at the risk of appearing tedious, to detail minutely the cases illustrating the position which I have taken, in order to allow others to judge as to the strength of the arguments.

I have further attempted to draw as careful a description of the beginning symptoms of malignant disease as I could possibly do.

First of all, it appears that there exists no rational or subjective symptom of canceroid or cancer, and above all no pain, at the early stages.

Hemorrhage is occasionally absent, even in a pretty far advanced stage of development. The mucous character of the secretion is only changed at a very late date.

The only outward indication of importance is a gradual loss of weight of body, which cannot be accounted for by copious bloody or serous discharges.

With regard to physical symptoms, the most reliable guide in judging a doubtful case consists in the ever-changing aspect of the neck, where alterations in size, density, succulence, and shape may be observed to take place from day to day.

The question as to the curability of cauliflower growth is so far from being settled, that one of the most recent authors on the subject, Dr. F. Kuchenmeister, a very experienced and able gynecological operator, declares the affection incurable. From his description of cases, however, I am led to believe that I have observed and operated on my cases at an earlier period of development,—and in three of them, which were true villous epithelioma, no relapse has taken

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place; in two instances twenty months have passed without a recurrence of the disease, and in the case first described in this paper a careful examination of the tissue of the uterus, removed after death, showed no trace of canceroid, eight months after the operation.

It is of importance to perform the operation in such a manner that the stump be not covered by vaginal flaps, in order to give a chance for caustic applications. The after treatment is as important as the operation itself.

The cases reported are few in number, but *many* when we consider the scarcity of chances we have to observe malignant disease of the uterus at the very outset of its development; *many*, if we consider, as I do, that interstitial chronic metritis is an affection observed but very rarely. To admit, with *Scanzoni*, that chronic metritis is the most frequent disorder to which the human frame is liable, would undermine the importance of the entire question of the relationship between canceroid and chronic metritis. I hold, however, and I am firmly convinced of the fact, that the disease which I have attempted to parcel out from among other similar uterine affections does not occur by far to that extent we are expected to see it, according to the majority of writers on this subject. Without being able to give statistical data at the present time, I feel justified in stating that I have been called upon to treat it less frequently than any of the conditions mentioned at the beginning of this paper. During the entire year which has passed, and treating, as I am, diseases of the uterus

almost exclusively, I recollect to have seen only two cases of well-characterized chronic metritis, besides the three mentioned in this paper.

It is a noticeable fact, that I have only seen that variety of cancer which is called epithelioma canceroid, in connection with chronic metritis. In none of those cases where I have met with *true carcinoma* at that early state of development, where the condition of the uterine tissue could as yet be ascertained, have I found it to develop on a neck enlarged by interstitial growth of cellular tissue. It is, however, the rule to meet with both canceroid and true cancer at such an advanced period of development, that a physician must be unusually lucky who has encountered half a dozen instances of malignant disease in its early stages of development, and I believe I am right in stating I have by accident seen more of beginning cancer than the majority of my colleagues, and thus I was enabled to collect the facts presented this evening for the first time. I am very well aware of the difficulty of finding an explanation of the coincidence of epithelioma and interstitial metritis. The more so since, at the present day, the doctrine of the pathogenesis of cancer is in such a state of fermentation, that it would seem as if what little ground we felt rejoiced to have conquered a few years ago was to be carried away by the flood-tide of the numerous recent researches. I will not detain the Academy by entering into a discussion of the latest—in many points conflicting—investigations. Whoever feels an interest in the matter I refer to the excellent and complete analysis prepared by Dr. *William T.*

Lusk and published in the *New York Med. Journal*, vol. ix., No. 6.

I will, however, briefly state that the drift of modern pathological anatomy points strongly towards a tendency to merge into one both cancer and cancroïd. Here is another point where clinical medicine and pathological anatomy cannot harmonize in their views. As yet we are not ready to admit that cauliflower excrescence and carcinoma uteri be one and the same affection, be it from a diagnostic or a therapeutical point of view.

If my observations should be verified by others, and not be mere accidental occurrences, they would go pretty far to corroborate the views entertained by some of the most prominent advocates of the school of Virchow, Rokitansky, and Rindfleisch among the rest, who have by numerous and very careful researches arrived at the conclusion that the enormous masses of epithelial cells in a cancroïd tumor derive their origin from the cellular tissue interspersed between the muscular strata.

I will give a short *résumé* of the more important points discussed in this paper:—

1. There exists a disease, usually called chronic metritis, and for which I propose the name: *Diffused Interstitial Metritis*.

2. The so-called first stage of development is only seen during the puerperal state.

3. It consists in an abnormal growth of intra-muscular cellular tissue.

4. The entire uterus, both body and neck, is equally diseased.

5. It is cured occasionally by amputation of the neck, not by any other means.

6. Pregnancy and delivery have not a beneficial effect, but are apt to prove a new stimulus to the abnormal growth of the uterus.

7. It is a disease but rarely observed.

8. Diffused interstitial metritis has a tendency to be transformed into cancrioid or simple cauliflower excrescence.

DYSTOCIA, FROM CAUSE PERTAINING TO THE FŒTUS—A
RARE IF NOT UNIQUE CASE.

BY STEPHEN ROGERS, M.D., N. Y.

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THE following history, first recorded in the Transactions of the New York Pathological Society, and published in the *Medical Record* of August 1st, 1867, is here reproduced for the double purpose of giving it a conspicuous and permanent place in obstetric literature, and as a theme for the remarks we propose to make upon it.

In the journal above referred to, my friend Dr. F. C. Finnell, of this city, is reported as presenting to the Pathological Society "two interesting intra-abdominal tumors from the body of an infant" whose history was as follows:—

A woman twenty-one years of age, about one year after her marriage, and, as she supposed, at about the eighth month of her pregnancy, was taken in labor at five o'clock in the evening. Twelve hours after, the membranes ruptured and the waters escaped, and three hours later the head was delivered. Beyond this point, however, there was no progress. The physician in attendance employed all reasonable force to complete the delivery, but did not accomplish it. He then summoned assistance and counsel, and renewed efforts were made, but the child remained in the same position, with only the head delivered. A third assistant, with unimpaired vigor, was at this time summoned, but his efforts only resulted in bringing down the arms, and severing the head and the arms of the child from the body. Dr. Finnell was now called, and, supposing the case might be one of hydrothorax, introduced a perforator, but found no water. He then introduced the hand into the uterus, and seizing the feet of the child, brought them down and tried to deliver, but found it impossible. Supposing that ascites might be the impeding cause, the abdomen was now perforated, but no water found. With the thought that the contents of the abdomen might be of a semi-solid, gelatinous nature, and difficult to force out of a small opening, the abdominal puncture was much enlarged by the scissors, but no fluid escaped. Almost in despair, the efforts at delivery were renewed, and after prolonged traction and hard work there was a sudden yielding, and the mutilated body of the child was extracted. On introducing the hand into the uterus for the purpose of removing

the placenta, an oval-shaped mass larger than the fist was found floating about freely, and was removed. This mass proved to be one of the two tumors above mentioned, and will be hereafter described. After removing the placenta and attending to the wants of the woman, the abdomen of the foetus was laid open, exposing a precisely similar tumor to the one found in the cavity of the uterus. It seemed to take its origin from the peritonæum, and had but very slight attachments. It was located in one side of the abdominal cavity, and in the opposite side there appeared a space which corresponded in size with the tumor found in the uterus. It was therefore apparent that this uterine tumor had originally occupied this space found in the peritoneal cavity of the foetus, and, during the efforts at extraction, had been squeezed out of this cavity through the opening made by the perforator and scissors, and thereby diminishing the size of the foetal belly so much as to render delivery possible, it having been evidently impossible while the two tumors remained together in the peritoneal sac. In connection with this history, it was distinctly stated that all of the organs occupying the peritoneal cavity were sought, and found in a healthy condition. On this account, probably, the tumors were at first regarded as fatty, and as such were presented to the New York Medical Union. An incision into one of them, however, corrected this impression, by showing that they were cystic tumors. A section of one of the tumors having been taken for more careful examination by Dr. Rogers, when they came before the Pathological Society at a subsequent date, he

reported them as fibro-cystic tumors of the purest variety. He stated that he had no knowledge of any pathological structure in the adult at all resembling this, except fibro-cystic degeneration of the testes. He would therefore ask Dr. Finnell if the fœtus was a male or female; and if the former, whether the testes were known to have been in the scrotum. Dr. Finnell replied that the child was a male, and that while he received the impression that its scrotum contained the testes, it was true that no especial examination had been made to find them. As the remains of the fœtus had been buried many days before these questions were put, it was then impossible to renew the examination.

Dr. Jacobi suggested that they might be either the supra-renal capsules or enlarged peritoneal glands.

Dr. Krackowizer remarked that, inasmuch as the tumors were so symmetrical, and both occupied the same position in the abdominal cavity of the child, it seemed probable that they were the result of an enlargement of twin organs and not of peritoneal glands; and as the report of the case had stated that the kidneys and all the other organs of the abdomen were found healthy, the suggestion that they might be supra-renal capsules appeared answered negatively. Dr. Rogers then said, that his previous questions and statements had no doubt created the impression that he believed the tumors to be *undescended fœtal testes in a state of fibro-cystic degeneration*, and such indeed was his belief.

On motion, a committee consisting of Drs. Finnell, Krackowizer, and Rogers were appointed to examine the tumors microscopically, and report. That commit-

tee presented the following report upon the true character of those tumors, a report which we copy from the *Medical Record* of September 16, 1867.

REPORT OF THE COMMITTEE.

The committee would first, however, beg leave to premise, that the history of the specimens as given by Dr. Finnell at the time of presenting them, having included the statement that all of the viscera of the ventral cavity were present, and in a healthy condition, and that it was a male foetus, whose testes were not sought for, nor examined, and consequently not known to be present, had, as the Society will recollect, directed the attention of some of its members to the foetal testes as the starting-point of the enormous tumors — enormous when compared to the healthy foetal gland. The absence of any report relating to the testes of the foetus was indeed the chief cause of the necessity for the formation of the committee. For with a perfectly healthy condition of the abdominal viscera of a male foetus, whose testes were not in the scrotum or canals, the existence of two exactly similar tumors, perfect duplicates of each other, occupying the two lateral regions of the cavity, and each provided with similar ducts or vessels, could scarcely be accounted for in any other way than by supposing them to be diseased testes retained in the peritoneal cavity. In the absence of this important evidence the committee were forced to resort to histological proofs in the formation of a conclusion as to the character of the growths. The form of the growth is that well known in pathology as fibro-cystic. The cysts are of all possible sizes, from an almost imperceptible vesicle to one the quarter of an inch in diameter, and as we believe are lined by a delicate membrane possessed of tessellated epithelium. At least, this is the fact with the cysts large enough for examination. On carefully dissecting the tumors, each one is found to have a duct or vessel of sufficient size to admit a common probe. The microscope shows that this duct or vessel is lined by an epithelium of the columnar variety. Tracing it deeper into the substance of the tumor, this duct is found to be an outlet from a kind of sinus extending in the direction of the long axis of the tumor for

about half its length. This sinus has several communicating or tributary ducts leading into it from various parts of the tumor, and is precisely similarly located and provided in the two, and possesses the same variety of epithelium as the duct. Besides this duct, each tumor has a vessel of very small size, possessing all the characteristics of an artery, leading into its substance, another having the appearance of a small vein, and lined with scaly epithelium, and between these two vessels is found a nerve-branch accompanying the vessels in their distributions. Under the microscope the nuclei of the neuralemma of this nerve twig are very distinctly visible and render its nervous character unequivocal. These three are united in one pedicle or cord, and are located at a slight distance from the large duct. Now, as this is precisely the histological description of the spermatic cord, and the epididymal portion of the spermatic duct, and of nothing else, further proof in support of the belief that these tumors are examples of fibro-cystic disease of the foetal testes does not appear necessary to the committee. Desiring, however, to leave no point uninvestigated, the following extract from Mr. Paget's lecture on fibro-cystic tumors will explain why the committee extended its microscopic examinations. He says: "We find examples of fibrous tumors thickly beset with numerous well-defined and lined cysts. This appears to be the nature of the 'hydatid testis' described by Sir Astley Cooper. The specimens that I have seen of it make me think that it is essentially a fibrous tumor in the testicle, with cyst formation in the tumor. For upon or around the tumor the seminal tubes or their remains may be traced, outspread in a thin layer, and without difficulty separable, and the substance of the tumor is a distinct mass of common fibrous tissue, with a variable number of imbedded cysts, filled with pellucid, serous, or viscid contents." The committee hardly expected to find any such layer of seminal tubes over this tumor,—above the size of, and very nearly the shape of half of the fully developed foetal brain,—for the foetal testis, which is about as large as a medium-sized pea, spread out to that degree could with difficulty be detected. But in the hope that it might have been differently disposed of, we commenced the microscopic examinations of various portions of the substance of the mass, and very soon found undoubted frag-

ments of both the straight and convoluted seminal tubes, lined with their characteristic cells. The whole tumor contains vast numbers of spindle-shaped nucleated fibro-plastic cells, and exudation corpuscles, and in some regions much mingled with these seminal cells. These fragments of the testes seem scattered over a great part of the tumor, for we have detected them in portions taken from widely distant parts. The locality of these fragmentary portions of the testes is generally marked by a slightly yellow tinge of the substance of the tumor, and a less cystic character of the point thus tinged. These fragments are mostly located near the sources of the vessels or ducts we have described as tributary to the longitudinal sinus of the tumor, and can with great certainty be pointed out. All doubt, therefore, in the minds of the committee as to the testicular origin of the tumors has been removed. But as to the precise pathology of the tumors, the committee see difficulty in demonstrating that the disease was originally of the fibro-areola tissues of the testis or of the cell-tubes; that is, whether it was a pure fibro-cystic disease, or whether it was in part a glandular tumor of the testis. If it be in part what is known as a "glandular proliferous cyst," distinguished by the presence throughout its substance of structure exactly similar to that of the gland upon which it is developed, it can be so only to a small degree, for large portions of the tumor are devoid of such structure. The committee therefore incline to the opinion that it is a pure fibro-cystic disease in the testes of the foetus; and they entertain the theory that the part of the duct present in the specimen corresponds to the epididymis, and represents that part of the seminal duct in a straightened and dilated condition. This view receives the confirmation of the best authorities upon the minute anatomy of the testis and its ducts; the epididymis being, according to them, the only portion of the seminal passage lined by columnar epithelium. The longitudinal sinus represents the rete-testis in a dilated state, forming an irregular but common canal; and the tributary ducts opening into it are the diseased and dilated vasa recta of the original testis. In conclusion, the committee would add that they have been unable to obtain any information of the record of a similar case of foetal disease, and that therefore, so

Plates to Dr. Rogers' Article.

(From Photographs.)

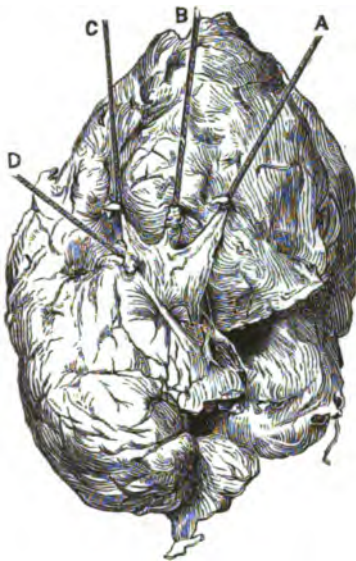


FIG. 1.



FIG. 2.

FIG. 1.—Epididymal aspect of the degenerated testicle (half natural size).

- | | |
|-----------|----------------------------------|
| A. | Thread tied to the vas deferens. |
| B. | “ “ nerve. |
| C. | “ “ vein. |
| D. | “ “ artery. |

FIG. 2.—Convex or opposite aspect of the testicle.



far as they know to the contrary, this is an unique case in pathological history.

STEPHEN ROGERS,
F. C. FINNELL,
E. KRACKOWIZER,

Committee.

Since the date of the above report, we have continued our research into the literature relative to the pathology of the fœtus, with a view to collect all of the recorded cases resembling more or less closely the one we here give, but, as will be seen by what follows, the conclusion of the committee that it is an unique case has not been changed.

The most recent systematic monograph upon the subject of dystocia, from causes pertaining to the fœtus, of which we have any knowledge, is that by Dr. D. Joulin of Paris. This work, published in 1863, makes the following classification of these dystociæ, viz. :—

First: Excessive size of the fœtus without other abnormal condition.

Second: Excessive size as a result of pathological change.

Third: Abnormal presentations.

Fourth: Procidentia, or vicious direction of the extremities.

Fifth: Parasitical tumors, containing foetal remains.

Sixth: Multiple adherent fœtuses.

Seventh: Error of locality of the fœtus, such as extra-uterine.

Eighth: Adhesion of a part of the fœtus with the uterus or its appendages.

Ninth : Deformity.

Tenth : Rupture and other lesions caused by the fœtus.

Eleventh : Tumors.

Under the second class, this author alludes to the pathological changes of all the important organs and cavities except the testes. He quotes a case of disease of the kidneys, which, on account of its resemblance to the one we have related, as respects the difficulties it presented, and the finally successful treatment, we will concisely state. The case is quoted from the "*Union Médicale*" for July, 1857, and is from the pen of Dr. Chevance. He terms the case one of hypertrophy of the kidneys. When he was called to see the case the head had been delivered, and had been nearly torn from the body by ineffectual traction in the attempt to deliver. Believing that the obstacle to delivery was ascites of the fœtus, he proceeded to turn, and then punctured the abdomen; but this resulted in no benefit, and it was not till after he had opened the belly of the fœtus and removed therefrom the enlarged kidneys, weighing 1,000 grammes (35 ounces), that he was able to complete the delivery (Joulin: *Cas de Dystocie appartenant au Fœtus*, page 47). As neither what was the exact operative procedure in this case, nor what is generally to be done in cases of dystocia from similar causes, forms any part of the object of this report, we will refer the reader to the original report, and to text-books on operative midwifery, for any information that may be desired upon those points. Cystic degeneration of the kidneys

is not a very unusual condition in the fœtus. Diseases of the liver and distention of the fœtal bladder are conditions impeding delivery less frequently met with. Disease of the fœtal testis, however, appears to be exceedingly rare. As a cause of dystocia, Joulin, as we have seen, does not even mention it. Prior to the occurrence of the case we herein present, we find an allusion to but a single case. That is a case referred to by our distinguished and industrious townsman, Dr. Wm. C. Roberts, in an elaborate and wonderful paper, published in the *American Journal of Medical Sciences*, in 1840 and 1841. On the subject of "diseases of the fœtus," he says, speaking of the fœtal testis, "I know of but two instances of their having been found diseased. One was a case of congenital hydrosarcocele, in the Edinburgh Essays, so enormous as that it had to be punctured before the delivery could be effected."* We have made all possible effort to obtain the original report of this interesting case, but have thus far failed, even after consulting Dr. Roberts, who does not remember the source of the information upon which he wrote that statement. As the volumes of the Edinburgh Essays which we have consulted contain no such history, we think there must have been an error in the name of the work quoted from, either by the Doctor or by the authority he used. As to what particular form of disease of the testicle this was, we have no positive information, but it is quite as likely to have been

* Vol. 2, New Series, 1841, p. 303.

cystic disease as any other. But whatever it was, it was clearly the cause of the dystocia. At least the combination of the enlarged testicle and the hydrocele was. The other case alluded to by Dr. Roberts, while in some respects it is most definite, in all that particularly touches the case we are recording as one of dystocia, is totally devoid of any history. He says it "occurs on the 76th page of Soemmering's catalogue, in the description of a large mature foetus, of which, among other diseased conditions, it is said, *testiculi in hydatides conversi*." *Op. cit.*, p. 303. This may probably be accepted as a general statement of a case of cystic disease of the testicle, but whether the testicle had descended into the scrotum, or was still in the cavity of the belly, we have no information. It is thought a fair inference, however, that on account of the minute examination and histological knowledge required to determine the character of a tumor like that of a diseased testicle when located in the peritoneal cavity, had they been so located at that early day their testicular origin would not have been discovered. If we admit this probability, it follows that the cystic disease of the foetal testis, mentioned by Soemmering, was found in the scrotum, and is unlike the case we record. But in the fact that both testicles were affected by the disease, we find another similarity. In the first case we have quoted from Dr. Roberts, we do not learn if both testicles were implicated or not. On the other hand, we have no knowledge that Soemmering's case offered any impediment to delivery.

We have also sought the original Latin record of this case, but have not as yet found it. Dr. Roberts in this case also has forgotten the source of his information. So far, therefore, as the accessible literature of disease of the foetal testis shows, the case we here record seems to stand alone: especially as a cause of dys-tocia. For an excellent chapter on the subject of cystic disease of the testicle, the reader is referred to the *Treatise on Disease of the Testis*, by Curling.

The close correspondence between the appearance of the diseased foetal testis here recorded, and the description of the cystic disease of the testis of the adult, as given by Mr. Curling, is an additional illustration of the general pathological truth, that the foetus is liable to become the seat of morbid processes at every stage of its development, and in every tissue and every degree, giving rise to phenomena and to conditions resembling those met with in extra-uterine or adult life.

CASE OF LACERATED PERINÆUM—HYPERÆSTHESIA OF
CICATRIX—REFLEX ACTION ON UTERUS AND
NERVOUS SYSTEM.

BY J. C. NOTT, M.D., N. Y.

I HAVE two reasons for publishing this case:—1st. Because physiologically, pathologically, and practically it possesses intrinsic interest. 2d. Because I am

charged by the patient with ignorance and malpractice.

The subject, Madame L——, a Creole of respectable family from New Orleans, for change of climate was advised by my friend, Dr. E. S. Chaillè, to come north, and while here to consult me. She arrived in this city the day before, and sent for me on 31st May, 1869.

She is of very short stature, and excessively fat, weighing more than 250 lbs., so much so that she had been unable to take any out-door walking exercise for several years; complexion good, age thirty-seven, neck very short, and troubled much with vertigo; very dyspeptic, no appetite, and ate so little that it was a mystery how she retained her size; often vomited blood, was excessively nervous, irritable, peevish, and sleepless at night. The fat had all accumulated in the last three or four years, it is presumed from her inability to take exercise.

Had been married, and was delivered of her first child fourteen years before coming to New York. The child was still-born, after a very hard labor, but she came well out of her confinement. About eighteen months later she was delivered, by Professor Cenas, of a fine boy, who is still living, and now about twelve years old. In this labor she was delivered by forceps, and although she could not have been in more skilful hands, the perinæum was lacerated down to the sphincter ani. No operation has ever been made to relieve the laceration, which still remained to its full extent on her arrival in New York.

Her first husband died after the birth of the second child, and she married again a few years afterwards,

but I do not remember the exact date. One prominent point in her case was the fact, that she *had not menstruated for eight years* before coming north. Every month the menstrual molimen made a demonstration by the usual backache and other similar symptoms, and there was sometimes a mere speck of blood seen, a drop or two at each epoch, but nothing more. She had at no time any leucorrhœal or watery discharge worthy of notice. This was her statement, and in making examinations every two or three days for more than a month, I never could detect anything but a trifling tenacious secretion from the cervix. There was no abrasion of the os, and the intravaginal portion of the cervix was small and perfectly healthy in appearance. Notwithstanding the lacerated perinæum, there was no approach to prolapse, but on the contrary the uterus was higher up than we usually see it in women who have borne children. This, however, was attributable perhaps to her great obesity. The axis of the uterus was normal, a little anteverted, as in the virgin uterus, and it was *atrophied from long absence of function, the sound not entering more than two inches*.

The cicatricial tissue formed over the lacerated perinæum extended upon either side about an inch, and was half an inch in width. The most novel and striking feature, to my mind, in the whole case was the condition of the cicatrix, which was *in a state of extreme hyperæsthesia*, and had been so ever since the laceration took place, now twelve years. The slightest touch of the cicatrix with a sound or the finger gave great pain, and was so intolerable as almost to throw her into

spasms. In making my examinations I had to be careful to avoid any friction on the perinæum; and the vulva being large, and the ostium vaginæ much lengthened by the laceration, I was generally able to examine the uterus without disturbing the perinæum. The pressure of Sims' speculum could not be borne at all, and I was compelled to use a small cylindrical one. She had been married some years the second time, and marital intercourse was always exceedingly disagreeable to her. She had married by the advice of some of her friends, under the belief that it might re-establish her menstruation, and thereby restore her health.

In addition to the symptoms already detailed, she was tormented with painful *Coccyodynia*—pressure upon the point of the coccyx with the finger, defecation, the pressure of a chair while sitting, the motion of rising up or sitting down,—in short, anything that communicated motion or pressure to the coccyx, caused severe pain; she was daily annoyed with dizziness; afraid to attempt to go up or down stairs; suffered much from neuralgic pains in face, back, limbs, and was much annoyed by cramps in the legs, particularly when she walked, even about the house. So disagreeable were the effects of exercise, that she had rarely attempted out-door exercise for several years before coming to New York.

Madame L. was accompanied by her mother, little son, and husband. The son was reduced to a mere skeleton by the confined action of chronic intermittent fever and *ozæna*. Being her only child, the mother was in so much distress about him, that she would not

submit to any treatment herself which would confine her to bed, and I therefore had to postpone indefinitely an operation on her perinæum, which I regarded as the chief indication in the case. I deemed it worse than useless to attempt any course of medication, as she had for years passed from one to another of the most intelligent physicians in New Orleans. Nothing had afforded any relief, and the only hope I saw of benefiting her was by removing the sensitive cicatrix, which there was good reason to believe was the source (by reflex action) of her amenorrhœa, complicated train of nervous symptoms, &c.

The little boy in a few weeks was improving, and as both he and the mother required a cool and healthy atmosphere, they were advised to go to Newport until the hot weather had passed. She suffered so intensely from the hot weather (which was by no means excessive), that she sweated to a degree I have never seen equalled. She would change her linen six or eight times a day.

To occupy the time, though with little hope of success, I determined to see what effect sponge tents might have in provoking the uterus to action; accordingly, about the middle of June, after passing a sound with difficulty through the cervical canal, and dilating a little, I succeeded in passing a small tent up to, but not through, the internal os. The next day this was removed, and one was passed fairly through into the cavity. No other tent was used, nor was there any further interference with the womb. Shortly after (not having noted the date, I cannot say exactly how long), about

the last of June, she had a bloody discharge for five days,—*the first she had had for eight years*; this discharge was in quantity about what is usually passed at a menstrual period; but I could not under the circumstances decide whether it was a true menstruation, or a simple hemorrhage provoked by the sponge tents. To the latter opinion I decidedly inclined, as she had not menstruated for eight years, and the uterus had become atrophied. The sequel to the case, however, will show that I was mistaken, as she not long after this flow became pregnant, and *never menstruated but the one time*. She left New York for Newport the first of July, and returned on the 25th of August, after an absence of nearly two months; and although it seems that she harbored the idea, she made no allusion to a suspicion of pregnancy to me, and such an idea did not occur to me as at all probable, if possible.

Her health had improved a good deal while at Newport from the cool bracing air, and relief from her perspirations. She still, however, was complaining, and all her nervous symptoms, with loss of appetite, began to reappear, and if I had been aware of her pregnancy, I should have attributed her symptoms in some degree to this cause.

After fighting along as I best could with her innumerable disagreeable symptoms until October, when the weather had got cool, I proposed again the perineal operation, on which we had been waiting for 4 months. I believed that the amenorrhœa and all her morbid symptoms were to be relieved, if at all, by removing this morbidly sensitive cicatrix and restoring the peri-

næum to its normal state. Seeing, as I did, no other hope of relief, she readily assented, and the operation was performed on the 16th October.

As the case not only presented several novel and interesting points, but, from the obesity of the patient, her general bad condition, and intolerance of anæsthetics, I anticipated a good deal of difficulty in the operation, I invited Drs. J. Marion Sims, T. Gaillard Thomas, and Wm. R. Whitehead to assist me. Ether spray was applied to the parts, and although the local anæsthesia was not complete, it so blunted the sensibility that I was enabled by rapid strokes of the knife to remove the whole cicatrix in a few seconds. The parts were brought together with four silver sutures, and altogether the operation was quickly and satisfactorily done.

Dr. Sims examined the case with much care and interest, and was struck by the extreme sensibility of the whole cicatricial surface covering the laceration. He found it very acute and abruptly confined to the cicatrix, neither the mucous membrane within, nor the skin on the outside, showing any abnormal sensibility. What was remarkable, too, after the cicatrix was dissected off, Dr. Sims remarked that the sensibility was gone, and that the raw surface bore rubbing with the finger much better than the cicatrix had.

Dr. Sims, moreover, gave it as his opinion that the woman would never menstruate again, or have a child. The doctor's idea was, that at the age of 37, a woman with an atrophied uterus, who had not menstruated for eight years, had reached her menopause. Madame L.—

repeatedly alluded to this opinion of Dr. Sims afterwards.

None of the parties present at the operation suspected pregnancy at the time, although the sequel shows that she was then about two months advanced.

Even if I had suspected pregnancy, I think the operation would have been justifiable, as her general health demanded relief, and it was clear to my mind that she could not, in her condition, carry a child to full term;—abortion was almost certain to occur, and no one seeing her as she was, suffering with the train of symptoms described, could imagine that she could carry the child nine months without loss of its life.

In a woman of short stature, weighing 250 pounds, with a very pendulous abdomen, how could a diagnosis of pregnancy be made at two months? Conjoined manipulation was impossible, and the sound alone, by producing abortion, could determine the point. She required relief from wearing, pressing symptoms, and the operation alone promised relief.

I have never in the course of my life had a patient give more trouble than this one. At the operation, from her extreme obesity and nervousness, she could not lie an hour in one position—she became covered with ecchymosed spots from the pressure of her weight, and rolled about from side to side for fifteen days, as if on a gridiron. She was incessantly annoyed by cramps and could not bear anodynes. The nurse, though experienced in such matters, could not introduce a catheter, and I was compelled to go to her house and empty the bladder at least three times a day.

The sutures were taken out on the 11th, 12th, 13th and 14th days, the union was found perfect, and the operation a success.

19th November, four weeks after the operation, I find this note in my record: "The case has progressed well to date, the union is solid, the soreness and morbid sensibility is no longer complained of; she is relieved of her cramps and nervous symptoms, trouble in the head, coccyodynia, etc. Digestion and appetite good, in high spirits, and says she has not felt so well for years."

About the 1st December she complained of irritability of bladder, for which I gave her extract of buchu; this disagreed with her stomach, and was withheld at the end of two days. She then complained of severe pain in the left iliac region and above it; pressure here was painful to her, but this passed off in four or five days.

17th December, just two months after the operation, she had uterine colics during the night, and about daylight in the morning of 18th a sudden and enormous gush of water took place from the uterus, with a few blood coagula. I still could not believe in pregnancy. On touching the os it was patulous, and a sound passed in about three inches, but I could get no other information by the sound. I supposed from the quantity of water, which was at least half a gallon, that it was some form of hydrops, either of the uterus or Fallopian tube. They described the quantity of fluid as so great that I examined the bed carefully myself, and found all the indications of more fluid than usually is seen at term.

She continued to have pains, with a good deal of flooding, through the day. Coagula from time to time were cast off, and about dark a fœtus of four months, which I think had been dead probably several days or a week, though not putrid.

As the coagula had been thrown away, I could not tell whether the small placenta had passed or not, and as the finger could only reach the os uteri, it was difficult to decide the point.

The next morning I found her feeble, with a good deal of fever, and Dr. Thomas was called in, but did not see her till the afternoon. By the time he arrived the fever had gone off, and she was so much better that the doctor thought no prescription necessary. On examination he found the placenta projecting about an inch from the os uteri, and tried by the finger and the assistance of bearing down to remove it, but could not, and we thought on the whole it was best, in her condition, to leave it until the next day. I called early in the morning and found the placenta in *statu quo*. She was feeble, and I told her to take some chocolate or milk punch, and that I would call at noon and see if I could get the placenta away. Before that time, however, I received a very polite note from Dr. Thomas, stating that he had been sent for, that Madame L—— had fallen out with me, and declared I should never touch her again, and saying that he was ready to do whatever was most agreeable to me in the matter.

I never was so astounded and surprised in my life, for up to this moment the lady herself, the mother, and husband, were long and loud in their praises; they had

no language to express their gratitude for six months' constant attention and kindness.

My first impulse was to see the poor woman out of her trouble, for her nervous system was in such a state that I hardly looked upon her as responsible for what she had done. I therefore requested Dr. Thomas to meet me at the bedside, which he promptly did. It was agreed at once to remove the placenta, which I insisted the doctor should do. He did remove it with his accustomed readiness and skill, and I took my leave, never to see the patient again.

Dr. Thomas informs me that the lady makes three specific charges against me.

1st. I did not know she was pregnant.

2d. I operated when she was pregnant.

3d. I did not know whether the placenta had or had not passed the day on which the abortion took place.

The members of the profession can judge from the foregoing statement of facts how far these charges are correct.

I will say in conclusion :—

1st. There was no rational ground on which to base a belief in pregnancy ; and if I had suspected it in a subject of such extreme obesity, at the end of two months, we have no means by which pregnancy can be with certainty determined, *unless by producing abortion*.

2d. Although I would not have performed the operation without a consultation, if I had been aware of pregnancy, still, I believe her case to be a strong exception to the general rule forbidding it, and I would unhesitatingly have advocated the operation. All

medical treatment for years had failed to relieve her, her health was steadily declining, and it was better to risk abortion, or a second laceration of the perinæum, than to risk a nine months' pregnancy.

3d. There was very small prospect of a woman in her condition carrying a child to full term; and if she did, it would be at great hazard to life. I therefore believe that abortion was the best thing that could have happened when it did.

4th. Dr. Paget says, in a recent lecture, that pregnant women bear operations well. Dr. Sims says he has repeatedly performed the perinæal operation on pregnant women, and would not have hesitated a moment in this case.

5th. From the facts that the foetus was dead at the time of abortion (two months after the operation), and that it was enveloped in such an extraordinary quantity of water, we may infer that the death of the foetus and the abortion were the result of hydrops uteri.

6th. If this lady regains her health, her recovery must unquestionably be attributed to the sponge tents, which aroused the normal functions of the uterus, after eight long years of inactivity, and to the removal of the hyperæsthetic cicatricial tissue, which must be regarded as the main cause of all her troubles.

The patient has taken upon herself to decide points of practice when none but medical men are competent to judge.

PUERPERAL CONVULSIONS: A CLINICAL LECTURE DELIVERED AT BELLEVUE HOSPITAL, DEC. 30, 1869.*

BY GEO. T. ELLIOT, M.D.,

Prof. of Obstetrics and Diseases of Women and Children and Clinical Midwifery in the Bellevue Hospital Medical College, New York.

I HAVE to-day, gentlemen, to offer you some remarks upon a case of puerperal convulsions, the subject of which is now in the wards; a case interesting and profitable alike for its severity and for the excellent and gratifying prospect of recovery. The historical facts of the case are briefly these: A young woman of twenty whose whole life had been passed in the country, goes out to service, is seduced, becomes pregnant, leaves her place, goes home to her mother; her mother notices her strange behavior, and seeks the cause in vain until it at last declares itself; for, as the poet has it,

"Coming events cast their shadows before."

With all this strain upon her mind for months, she is unwillingly compelled to make a confidante of her mother; but it is necessary to keep it hidden from the father. This girl then tries to obtain from her seducer the means of supporting the child in the future, and signs a paper releasing him for one hundred dollars in cash, with a promise of another hundred, which, however, he is not inclined to give. From this hospital, to which she comes as an asylum in which she may hide

* Phonographically reported especially for this journal, by Alexander Hamilton, M.A.

herself from her father, her friends, and the world, she writes a note to this man, who sends it to a lawyer, and he writes her a letter that she is guilty of attempting extortion and may be committed. With this agonizing strain upon her mind, she passes on to her confinement.

I mention this not because of its remote but because of its direct influence. There was a hospital in Liverpool which exhibited a remarkably low rate of mortality in its lying-in wards; but it was found that they excluded primiparæ. Just so surely as you exclude primiparæ, and especially those who carry with them the whole burden of their shame and sorrow, the results are vitiated, and cease to exhibit the fair ratio of mortality for more liberal institutions.

She had the ruddy, hearty, healthy, robust appearance not incompatible with the development of the coming trouble. She had her urine examined by the house physician; as the law in the hospital is that the urine of pregnant women should be examined once a week, especially in primiparæ; and, more especially, in those in whom there is œdema of the face, or in whose urine albumen has been present or suspected, in a previous labor, or at any other time. Her urine was perfectly normal, and up to the standard. So healthy was her appearance, and she seemed so well, that the house physician did not examine it again. This is to be regretted. In private practice I follow the same law, especially in a primipara, of examining the urine as to whether it contain albumen, and the amount of this ingredient, as to its specific gravity, as to the

amount secreted by the kidneys in twenty-four hours, and as to the microscopical evidence of casts, and in doubtful cases for the amount of urea excreted. Experience teaches us that frequent examinations will, if their warning voice be attended to, enable us often to ward off threatening trouble, and will disclose a tendency to trouble, in given cases, where one of the conditions may obtain and all the rest be lacking.

Our patient went through her labor well, the first stage occupying thirteen hours; the second, a few hours; and the third, ten minutes. The labor was perfectly normal, except that the head was delayed in passing the vulva, the delivery being accomplished about noon of Sunday, Dec. 26. She remained in a favorable condition until 7.15 P.M. of the same day, when convulsions commenced. Convulsions occurring after labor belong to a class of cases in which we have more hope than in those in which they antedate labor. It is an obstetric law that, when they occur during labor, we are, as a rule, to terminate the labor promptly, and place those that may follow in the category of *post-partum* convulsions. She had the attack, then, at this favorable time. She recovered consciousness—a favorable symptom. She recognized the next approaching convulsion, exclaiming, “Oh, doctor, it is coming now!” and away she went into another. Puerperal convulsions are not all alike. Epilepsy which has existed for a long time before rarely shows itself in labor, and, if the kidneys be free from disease, you may anticipate that the epileptic will not have a fit during parturition. Hers were not of the ordinary, or hysterical form of

convulsions, but were a severe, true eclampsia, by which term we designate convulsions that are truly epileptiform and distinguished by a total abrogation of consciousness.

I saw this woman in several attacks, and the phenomena were just these: The patient, lying languidly, breathing regularly, totally unconscious, commenced to turn the head stiffly to one side—and when you see this peculiar version of the head, under these conditions, you may be pretty sure that a convulsion is coming on—the mouth open, the eyes fixed, strabismus often,—either divergent or convergent,—silence for a moment, and then a hissing expiratory sound, with puffs of air like a locomotive, with the face still turned to one side, the cutaneous circulation of the face congested, the eyes starting, but with the lids closed, the conjunctiva congested, the face and tongue growing continuously bluer and blacker, all the limbs, which at first participate in the general rigidity, pass into violent and jerking contracting, clonic movements up and down; at last, as the convulsion goes on, the face gets blacker and blacker, the tongue is protruded, and may so far pass forward, gorged with blood and covered with froth, as to get between the teeth, and then, towards the close, the masseter muscles take on this same clonic action, and close upon the teeth, biting, perhaps, the cheeks and the protruding tongue, while blood and saliva may flow in mingled streams from the lips. This lasts for a variable length of time, with the face growing still darker and blacker, and then the convulsion ends with a deep inspiration;—with the first thorough respiration the attack is over.

Then follows a stage of the most profound chloroformic relaxation, stertorous inspiration, and, with cheeks flattened, breath is expelled in gusts from the mouth, lips, and flapping cheeks, all the while the dark blue color gradually disappearing from the countenance. The pulse is quickened during the whole convulsion. She may remain in this state, after the convulsion, for a considerable time, or go at once into another. Instead of this *pleurothotonos*, there may be *emprosthotonos*—she may rise in bed, all the while being completely unconscious, and then comes the true eclamptic attack again, or the recurrence may be ushered in by *opisthotonos*.

From the second or third convulsion, that is, from four o'clock on Monday morning until ten last evening (Wednesday), this woman remained in a state of absolute unconsciousness; and from Sunday evening until Monday night at nine, had, in all, nineteen convulsions, with the dangerous complication of œdema of the lung, developed on Tuesday morning, and yet she is going to do well.

Now Dr. Pingry, the interne, had treated her well, had given her a hot air bath, had given elaterium to act as a hydragogue on the intestines (and it is a prompt and reliable hydragogue cathartic), also chloroform, during the convulsion and a little before it, so as to anticipate what was coming, but without controlling it—all this before I saw her. A grain of elaterium in all had been given, without producing the desired evacuation, and then Dr. Pingry came for me.

The responsibility of such cases is very great, and no

routine treatment can be laid down, or should be uniformly followed. We must then consider the physical character and present condition of our patient, and treat accordingly. I found a stout, sturdy, strongly-built woman of twenty, from the country, who had been described as hearty and healthy before her confinement; not one of your pale, pasty, anæmic women. I saw, when I came, that the elaterium was beginning to evacuate the bowels, and it soon produced full passages.

There was a strong and good pulse; and, on putting my ear to the heart, I heard the first and second sounds clearly and distinctly, with no anæmic murmur, no disease of the heart, no fatty degeneration. Why this careful examination of the heart, you ask? Because, when considering whether you will adopt the spoliative treatment or not, you must determine the condition of the circulation by an examination of the heart as well as the pulses. Here, then, I found a strong and healthy heart, with good, rich blood, in a hearty young woman with convulsions which had occurred *after* delivery. I decided to take blood from the arm. This I do rarely and reluctantly, and only when driven to this venesection by urgent necessity. I hesitate in this matter, not alone because I deprecate in it the routine use of the lancet, but because the tendency of these cases is to anæmia and hydræmia afterwards, so that we must save the strength of our patients for the future. But, in the conditions then present, the resort to abstraction of blood was appropriate, in my opinion. Venesection is rarely performed now; so rarely that it is a very common thing for me to meet, in practice and in consulta-

tion, physicians of high professional status and large practice, highly educated men, who have never seen any venesection at all. It was performed by Dr. Pingry, and, we watching the condition of the patient, ten ounces of blood were taken from the left median cephalic. The pulse and heart were, afterwards, in as good condition as before. The blood taken was saved, and sent to be examined as to the amount of urea it contained; the report, made without quantitative analysis, was, that it contains a much greater quantity than should be in the blood. We had then the fact that there was present, in this blood, an unusual proportion of urea; and we know that, at the present day, we attribute much of the disturbance that occurs in albuminuria to the presence of urea in the blood. Here, then, this abnormal condition was found.

The case went on. The elaterium acted. The spoliative treatment had been accomplished. She was watched in turn by two members of the hospital staff, for Dr. Pingry had called Dr. Sproat. And, to show you what care these women have, I may state that, from the time she had her first convulsion until she did not need further observation, she has never been left alone, but has been watched by these gentlemen, night and day, and notes of the case have been made minutely and accurately—a strong argument in favor of such establishments as these, where the poor and unfortunate of every class can receive that treatment and attention which it is the glory of our art to bestow.

Chloroform was afterwards tried again. I waited

to examine the albuminous urine, and saw her again at nine A. M., Monday, and regretted to find that consciousness had not returned, and that the convulsions still went on. In the interval, according to my advice, two ounces of blood had been taken, by wet cups, from over the kidneys. Finding her in these circumstances, I decided to give bromide of potassium, a remedy with effects, in quieting the nervous system, such as are recognized all over the civilized world. Besides, its effects as a diuretic are now established, and these are desirable in just such cases as this. I saw in this medicine a remedy which, I hoped, would increase the secretion from the kidneys, and which, above all, would quiet the nervous system. Accordingly it was given, thirty grains at first, next twenty, and then ten, making a drachm in all, taken within three hours.

Now I lately met, in consultation, a physician of extensive practice, who, in speaking of giving medicines in convulsions, said that such a remedy could not be given, because the patient could not swallow. There are some affections in which partial paralysis of the muscles of the pharynx exists, and in which swallowing may not be effected; but I have never found any difficulty in eclampsia, if given in this way: Mix the remedies with butter, and then put this little pat of butter upon the back of the tongue. If the pat produces any irritation, it is swallowed at once, slipping down easily. If the patient be so insensible to reflex action that she does not swallow, it rapidly dissolves and trickles down. Thus remedies are to be given in

cases such as this. She had a drachm of the bromide, therefore.

I saw her again at half-past five P.M. At this time there began to be a great dryness of the skin, and along with it an increase of the pulse in temperature and rate. I said to myself, the hydragogue cathartic has acted well, the kidneys are beginning to secrete, although she has taken no drink; the spoliative treatment has been carried far enough, yet not too far; now let me bring the action of the skin to bear, and accordingly ordered liq. ammoniæ acetatis ʒvj., with ʒiij. of sweet spirits of nitre, and then ordered an ounce an hour of the mixture, saying, we will have the effects of the remedy during the evening, and we will also give support if necessary, by enemata containing milk, eggs, etc.; but these were found unnecessary. She could swallow, and, under the use of the remedy, began to perspire.

I saw her again at ten P.M. The convulsions had continued; and I then recommended the use of the hydrate of chloral—the idea now being to soothe and quiet the nervous centres. Accordingly gr. xx. of the hydrate were given, in two doses, under the administration of which the temperature was reduced slightly. During the day, sixteen ounces of urine had been secreted, slightly less albuminous, and containing hyaline casts.

Then, at five the next morning (Tuesday), Dr. Pin-gry watching her, the temperature was declared by the thermometer to have run up, and cedema of the lung was recognized. Now cedema of the lung is one of the con-

ditions always liable to happen in albuminuria, from whatever cause, and may be fleeting or persistent. Such infiltration or effusion as it implies may take place into any serous cavity, as the pleuræ, or into the lung, just as it may into the subcutaneous cellular tissue of the face, arms, or other part. In regard to this œdema of the lung, I have seen many cases, and have known it to increase and to disappear with great rapidity—a clinical fact of great importance. I have seen this occur in consultation with such physicians as Dr. Alonzo Clark, when it is not possible to doubt the existence of the œdema. This œdema, recognized by Dr. Pingry, placed life in the most profound peril, as the lungs, the important oxygenating centres, were being drowned, for they were fast filling up. Dr. Metcalfe happened to be in the hospital, and recommended the further use of elaterium, a right and proper thing to do. Accordingly, a grain more was given, in two doses, in order to drive from the lungs, and expel from the system, this poison which had accumulated in the blood. At the same time she looked as though about to die; the pulse could scarcely be felt, the number of respirations was between sixty and seventy, with tracheal râles. The case seemed hopeless; and so, from the result, we may draw another clinical maxim—never give up cases until they are (not thought, but) proved to be dead, a very good plan indeed. The case went on through the day, the kidneys beginning to secrete, she taking nourishment with the stimulant which was added. The urine became less albuminous, the kidneys were recovering, but still there was extreme

debility with absolute loss of consciousness, yet without recurrence of the convulsions.

I stood ready to transfuse, if necessary ; not to keep her from dying from loss of blood, because there was no danger of that, but to supply healthy blood instead of the poisoned and unoxygenated material. When danger first appeared, I had requested my friend to write a note to Dr. Austin Flint, Jr., asking him to hold himself ready, with his Roussel's apparatus, to transfuse if necessary. But there would have been no use in transfusing with oedema of the lung ; and it would but be bringing a good remedy into discredit. But, if oedema had not arisen as a complication, and if she had gone on with steadily increasing convulsions, I would have held it to have been my duty to transfuse her. The plan was employed first at Heidelberg ; and, by Roussel's instrument, provision is made for taking away the blood from a vein of one arm of a healthy individual, which is then siphoned off into a vein of the patient. The blood can be seen as it passes from one to the other, and we can watch that no bubbles of air can go in without being seen as they pass through the glass tube of the instrument. I believe it to be the best plan yet devised. I held it in reserve, as I would in every similar case. For, in so far as the patient's strength would permit, I would take away, through the skin, the intestines, and the kidneys, the poison that has accumulated in the system, and then, if necessary, supply it with fresh and reliable human blood for its support, while the nervous centres are to be soothed by appro-

priate remedies. However, transfusion was not used, because it did not become necessary.

The patient struggled out from the œdema of the lung, which had set in. At present there is no evidence of it in the lung at all. She recognizes every one she knows, answers questions intelligently, is sensitive to light; her pupils dilate and contract well, although the eyes are kept pretty constantly closed. We feared some paralysis of the right side of her body, but she can now draw up her arms and legs. The body, shaken and shattered by torture of mind, is coming around nicely, with the kidneys working well, and eliminating the poison from the system.

Now, gentlemen, in regard to this question of the kidneys I have, in a published work of mine, the "*Obstetric Clinic*," stated my conviction that, no matter what amount of albumen was excreted in a given case, or what variety of casts was found, still there is nothing in these conditions, by themselves alone, to prevent the kidneys of a pregnant woman in these conditions from returning to a perfectly healthy condition. At the same time, it becomes your duty, wherever such a special predisposition exists, to watch narrowly her urine in subsequent pregnancies. Such affections of the kidney as are indicated by these symptoms are, however, more dangerous in multiparæ than in primiparæ. I never saw attention called to this before I stated my convictions. In the review of my book in *The American Journal of Medical Science*, the reviewer has given the opinion that my conviction that perfect recovery of the kidneys may follow such albuminuria, and amount

and character of casts, should be allowed to stand for what it might clinically be worth; and presented a long list of names in opposition. My statement is true, nevertheless; and it will stand. It is already supported by other observers; and has received additional confirmation since that time. I *know* it is true, because I have observed such cases with albuminuria, whose urine would gelatinize under heat and nitric acid, with casts of every kind and description, and yet have seen the patients recover and remain with healthy kidneys. These conditions of the urine, occurring in pregnancy and labor, are as likely to be recovered from, perfectly and fully, as the same conditions of urine occurring in scarlet fever, or the exanthemata generally; or, as sometimes happens, in pneumonia. Hence, you must be guarded in your prognosis when these conditions are found in a case of labor. You are not to say that this patient is the victim of a formidable form of Bright's disease; and that, if she do not die now, she has but a short time to live,—for it is not necessarily true; because she may pass on to perfect health. Nor can you say, when, at the autopsy, you find evidences of nephritis, that these appearances, found in the *post-mortem* examination, could not have been recovered from, had the patient lived. It is true, there are many appearances connected with advanced disorders of the kidney, which unfit it for performing its functions properly, but the point is this: the microscope and chemical tests show states of the kidneys, in a certain proportion of cases of eclampsia, where there is no absolutely necessary incapacity for performing perfectly their physio-

logical functions for many subsequent years. Your opinion is, however, to be modified in this respect, if, in a given case, by examinations repeated for a long time, it is shown to you that, before the puerperal condition complicated matters, there was present indubitably one of the forms of Bright's diseases; and then, if upon a weak organ, which is already incapacitated for its work, there is put the additional strain of pregnancy, the organ may succumb hopelessly. There is another reason why this opinion must not be given so decidedly: the law of parallelism obtains in diseases of the kidneys, for it is very rarely that we find one diseased and the other not. I have, however, seen the kidneys taken from the body of a woman who had died of puerperal convulsions, and found one of them diseased and the other healthy, and then have given them to competent observers, and have received reports in absolute accordance with ocular inspection. Again, you must not say that albuminuria inducts disorder of the kidneys: because the condition may depend upon the admixture of blood or pus, passed with the urine, as in catarrh of the bladder, or from the accidental and temporary admixture of blood, or any other fluid containing albumen. I could tell you of cases of diagnosis faulty from a too hastily given opinion. The condition of albuminuria may exist where there is chronic catarrh of the ureters, a dilated ureter or a partial hydronephrosis, conditions which cannot be positively recognized during life, and which are made out with certainty at the autopsy alone. In such cases, physicians are not warranted in making an unreserved diagnosis during life

In a case which I saw, ten years ago, there was evidence of catarrh and calculi of the kidney. I was in doubt whether a largely dilated right ureter existed or not. Upon examination through the rectum, there seemed to be pain at a part of the bladder corresponding, as near as Prof. Van Buren and I could make out, by conjoined rectal examination, to where he experiences a great deal of pain at the probable entrance of that ureter into the bladder. His urine contained thin clouds and masses of mucus and albumen. I have told him that I would very much like to see the actual conditions of things, whether there is dilatation of that ureter and hydronephrosis, but I think that he is going to outlive me.

Again, when there is but a faint trace of albumen, learn to trust the examination of no urine from a woman in the puerperal state without it has been drawn off with a clean catheter, after washing the vulva, for the catheter may take in some discharges from the vulva which may contain albuminous fluid. Trust no examination, where your responsibility is great, unless you are positive that you have drawn off all the contents of the bladder. I was consulted, only yesterday, as to the condition of uterine disease in an elderly woman; I touched the uterus, found the bladder distended, said, "Let us empty the bladder," and was handed a silver catheter,—although much preferring, as you know, a male elastic catheter,—and asked the Dr. to apply it. When he had drawn off the urine it appeared healthy. I then made an examination, thinking that the bladder was empty, but found

that there was more within. I then took the silver catheter and drew off nearly as much as before. The supernatant liquid was pure, but, at the bottom, evidences of catarrh of the bladder were plainly to be seen. Here, then, is an illustration of the absolute necessity for drawing off the urine, intended for examination, at or about the period of labor, with the precautions given you, and for the necessity of drawing off the whole urine.

Let the deep interest of the subject be my excuse for detaining you beyond the time. When you have carried your patient on to this stage in an attack of puerperal convulsions—and you are to remember that they may well occur in circumstances widely different from those of the present case, even where there is the most perfect domestic harmony and felicity—then you must keep her quiet in body and mind for a length of time, must secure sleep at night, must look after her nourishment, must carefully examine her urine, to ascertain whether the kidneys are doing their work. Drawing it off with the catheter for twenty-four hours is the only way to be absolutely sure; then measure the amount, to know how much is passed; and then examine the residuum with the microscope, testing it as it comes for albumen, and then making a quantitative analysis for the urea that is being excreted. When the amount of urea comes to the full normal standard, and all other conditions correspond, you may consider that the kidneys are doing their work.

After the urine is perfectly normal, then give her a good intelligent caution for the future. In the first

place, there must be no pregnancy for some time; certainly it is better to wait two years. Since the kidneys have been but lately disordered, and have been just restored to their normal condition, she must be instructed to wear flannel, in order to guard against any check in the performance of the functions of the skin, and subsequent congestion of the kidney. She should live in the open air, with free exercise, and good diet, the nitrogenous elements of food being supplied or withheld according to the way in which the kidneys do their work. She will probably need iron, for in such cases there is a tendency to hydræmia, absolute as a law. Even the most robust will be apt in time to give evidence of chloro-anæmia: in which case direct your attention to the venous hum in the neck, and continue treatment until assured that it is no longer there, and until all other signs of anæmia are gone. In this manner only will you do your patient full justice.

If she become pregnant again, watch the urine with redoubled care, examining it continually, and ward off the coming trouble by proper treatment. If there be such serious disturbance that palliative measures will not suffice, then the question comes up as to when premature labor is to be induced. By acting on the skin, the kidneys, the intestinal mucous membrane as far as may be judicious, and with vegetables and fruits as a diet, endeavor to carry her on to a time when premature labor may be induced with the hope of saving the lives of both mother and child, or perhaps to term.

In conclusion, let me warn you to be careful in the use of opium where there is deficient action of the

kidneys, and where there is an accumulation of urea in the blood. There are cases in which opium is treacherous, and in which many lives have been lost by the injudicious use of this remedy. Besides, the ease with which it is administered by the hypodermic syringe is a temptation towards the most dangerous way of prescribing it: because it at once passes beyond your control; and, again, it might be immediately absorbed by some venous radicle. In any case, there is a certainty that its absorption will be prompt; and then, if unfavorable symptoms follow, there is far less opportunity of overcoming them than there would have been had it been administered by the stomach, when its evil effects may be largely prevented by emesis. I speak from knowledge that what I offer you is a valuable guide to take into practice; but do not speak from any sad personal experience of my own, but with knowledge of the sad experience of others.

A CASE OF OVARIOTOMY. THE PEDICLE SECURED WITH
SILVER WIRE BY A NEW METHOD.

BY THOS. ADDIS EMMET, M.D.,

Surgeon-in-Chief of the Woman's Hospital of the State of New York, President of the New York Obstetrical Society, etc.

THE proper treatment of the pedicle after the removal of an ovarian tumor still remains a mooted question. The various means which have been proposed are all

applicable to certain conditions of the pedicle, but no single method has yet been accepted as combining the advantages of each in common, and applicable to all cases. Without entering into a consideration of the merits of the question, I will simply state that for some time past my preference has been in favor of returning the stump whenever it was practicable to do so, and of closing the abdominal section. The silk ligature, in its ready application, presented many advantages over the silver wire, but I have used chiefly the metallic suture in preference, regarding its use as attended with less risk afterward. The method, as practised by Dr. Sims, of securing the pedicle by means of a series of interrupted silver sutures, I have used several times, and considered it a great advance. I found, however, that without the pedicle was a thin one, troublesome oozing of blood frequently occurred from the tissues becoming lacerated in the tract of the sutures, as a consequence of the tension exerted in an opposite direction, as each loop in turn was twisted.

October 18th, 1869, at the Woman's Hospital, I removed, from a patient thirty-three years of age, a multilocular ovarian tumor, weighing forty-five pounds, which had been of some two years' standing. As a large portion was nearly solid, the section had to be extended for several inches above the umbilicus before the mass could be removed. Chronic peritonitis had existed, but the adhesions were slight, except at one point, to the omentum. The left ovary was found involved with a long and rather thin pedicle.

My friend Dr. Sims kindly introduced the sutures for

me by his method, but unfortunately some oozing took place from the splitting of the tissues, as had been my previous experience; but after some delay it was controlled by the introduction of a parallel row of interrupted sutures, so as to secure the angles of the lacerations. This patient, however, rapidly recovered, and was discharged cured, November 29. Realizing that this difficulty must frequently occur when the pedicle was thin and small, I resorted to a different method of applying the wire, as illustrated in the following case:—

Mrs. S., aged twenty-eight, a native of New York, was admitted to the Woman's Hospital Nov. 25th, 1869. She had married at fifteen, and was the mother of four children. The first child was born two years and four months after marriage, and the last two years and eight months previous to admission. She had been in good health until the latter part of December, 1868, when the abdomen began to enlarge rapidly, with frequent and painful micturition, while she suffered at the same time from constant pain in the back and left inguinal region. The enlargement was so rapid, that at the end of two weeks after it was first noticed she was unable to wear any of her clothing which had previously fitted her, her appetite began to fail, and she soon became emaciated. Before the end of February the tumor had enlarged nearly, as she stated, to the size presented at the time of admission. The catamenia, which appeared first at the age of fifteen, and had always been regular previous to this time, became now irregular, and of shorter duration, until it ceased

in the following May. Just previous to admission she had arrived from New Mexico, where her husband, an officer of the army, was stationed. She was much emaciated, with œdema of the lower extremities, and scarcely yet recovered from the fatigues of her long journey, but cheerful, and very hopeful of a favorable result from surgical interference. A large multilocular ovarian tumor filled the abdomen, extending up to the sternum, and causing the false ribs to bulge outward to a great extent. The circumference of the abdomen, on a level with the umbilicus, was fifty-two and a quarter inches. The distance from the ensiform cartilage to the umbilicus was thirteen and a half inches, and to the pubis twenty-five inches. From the left anterior superior spinal process to the umbilicus was fifteen and a quarter inches, and on the right side fifteen inches. The mobility of the tumor was but partial. Œdema of the abdominal wall, with much thickening of the tissues, existed from the pubis nearly to the umbilicus. The linea alba was well marked, with an unusual number of superficial dilated veins distributed over the abdominal surface. The whole abdomen was dull on percussion, with fluctuation easily detected at every point, yet varying greatly in distinctness. The uterus was found high up in the pelvis, somewhat forward, but movable, and its cavity of a normal depth. The urine was carefully subjected to both a chemical and microscopical examination, without detecting any deviation from a healthy condition. The heart and lungs were in a normal state, but the pulse was weak, and ninety-eight per minute. The tongue was clean, and the bowels

were regular as a habit, but the skin was dry and inactive.

Her condition from the distention rendered an early operation imperative, and in fact the lesser evil, although much enfeebled after so long a journey, and unacclimated. The preparatory treatment was completed in a week, and consisted of a Turkish bath every other day, with five grains of inspissated ox-gall in the form of a pill, three times a day. On the third day a dose of castor-oil was administered; and on the night previous to the operation a large enema of hot water, into which a portion of ox-gall had been dissolved, was thrown into the rectum, while the patient was placed on the knees and elbows. Her diet had been carefully regulated to be as nutritious as possible, in a small bulk, and consisted chiefly of strong beef-tea. Her condition improved soon in a marked degree. The œdema of the extremities was removed by rest and bandaging, and she no longer suffered from the great distention after the thorough cleaning out of the bowels, while her skin, from the use of the Turkish baths, had become soft, and in excellent condition.

Operation December 1st, 1869, at two o'clock P.M. The following gentlemen of the Consulting Board were present:—Drs. Sims, Post, Peaslee, Taylor, Barker, Cock, and Geo. T. Elliot; Drs. Perry, Swift, Brown, Winston, and Hunter of the Hospital Staff; Dr. Caswell, of Providence; Trock, of Astoria; and Nott, Snelling, Newman, Walker, and other gentlemen in the city. An incision of some six inches was made midway between the umbilicus and pubis through the

linea alba, which was very distinct in consequence of cedema of the surrounding tissues. On reaching the peritonæum it was found firmly adherent to the tumor in every direction. The main cyst, together with several others, was emptied through a common opening. By degrees the adhesions were carefully stripped off from the surface of the tumor itself, using chiefly the finger-nails for the purpose. The adhesions extended from about four inches above the pubis to the diaphragm, and from five to eight inches on either side of the median line. To facilitate their separation it was necessary to extend with scissors the abdominal section upward and to the left of the umbilicus, until it reached fourteen inches in length. Although the hand was introduced into the main sac, and an attempt made to break down into it the numerous small cysts, it was found impossible to empty but a small portion of them, and with difficulty the mass was finally removed through the extended abdominal opening. The tumor was from the left of the uterus, with a thick pedicle three inches in width. The right ovary and uterus were in a healthy condition. The ether was administered by Dr. Perry, and the case required the most careful watching, as several times during the operation the shock was so great that stimulants had to be resorted to. The tumor was removed at the end of an hour and a quarter. As the mass was held up, a clamp taken from one of Chapman's ice-bags was placed on the pedicle as close to the tumor as possible, when it was severed by scissors. A section of stout silver wire (No. 25) had been prepared, about eighteen inches in

length, to each end of which a common coarse sewing needle had been soldered, after bending a portion of the wire into each eye. In the grasp of the clamp the pedicle had been spread out to its full width, and as it was held up, the ligature was introduced in the following manner. Below the clamp a needle was passed through the pedicle about an inch from its edge, but before its withdrawal the needle in the other hand was inserted along its course from the opposite direction. The two needles were thus drawn through, in the same manner as the shoemaker's stitch, and at the same time the wire was tightened around the included section as much as could be done, in consequence of the proximity of the clamp. The needles were introduced again in the same manner, so as to divide the pedicle into three sections. With the ends of the wire in one hand, the pedicle was seized between the grasp of the thumb and fore-finger of the other hand, and at the instant of removing the clamp, by traction on the wire, the parts were drawn up tight together in two sections, while all bleeding from the third one was controlled by pressure of the thumb until the ends of the wire could be twisted. The ends of the wire were seized about an inch from the pedicle in the grasp of a pair of forceps, and carefully twisted over Sims' shield, to a point at which the integrity of the wire was still unimpaired. The twisted portion was cut off at half an inch in length, and bent over flat along the course of the ligature, so that the end was perfectly protected at the bottom of a deep sulcus. This ligature was applied in far less time than a clamp could have been adjusted, with perfect control of all

bleeding, and to a pedicle which, from its size, would have been difficult of management in any other manner. So perfect was the compression, as the wire was tightened the tissues retracted from the blood-vessels, so that they projected a quarter of an inch beyond the plane of the divided surface which had been in common.

Although the adhesions had been stripped off so extended a surface, no oozing of blood took place afterward, except high up in the vicinity of the spleen, where the adhesions could not be separated from the tumor with the same care, in consequence of the difficulty in bringing the parts fully in view. To the bleeding points the fluid extract of ergot was applied, but it proved valueless as a styptic, and afterward the persulp. of iron was brushed over the surfaces, but in small quantities, wishing to avoid the formation of an insoluble clot.

The external wound was closed by fifteen interrupted silver sutures, and were introduced far back from the edges, so as to include the peritonæum. As the oozing had not entirely ceased, high up on the left side a quantity of cotton was formed into a compress, so as to press the relaxed abdominal wall, at that point, well up under the ribs; this pressure, it being thought, would be sufficient to control all bleeding. Over the whole a broad bandage was applied, and she was placed in bed, with artificial heat around her. Immediately before the operation she was weighed on a platform scales, and her weight, with that of her clothing and the table, ascertained. She was placed on the scales after the operation, and it was found that she had lost sixty-nine

pounds. The accuracy of this method was tested by carefully weighing the fluid and the mass taken away, with a difference of less than two pounds, which had doubtless been lost in the sponging. Immediately after the operation her pulse was 120 and very feeble, but reaction came on promptly. At 10 p.m., as she was restless and complaining of pain in the back, a teaspoonful of McMunn's elixir of opium was given by the rectum, and she passed a comfortable night. The sutures were removed December 7th, and the union was found complete. December 9.—To this date her convalescence had been slow, but without any interruption. Small circumscribed abscesses now formed at the entrance and exit of the abdominal sutures. Their formation was evidently due to the diminished vitality of the tissues consequent upon the œdema and distention to which the parts had been subjected by the enormous size of the tumor. December 10th, pulse 108. Up to this time no alcoholic stimulants had been found necessary, but were now ordered. During the night of December 12th, was seized with severe cramps involving the muscles of the inner part of the thigh, and afterward in the calf of the left leg and foot. Large doses of opium were found necessary to relieve her suffering. Next morning the leg to the ankle was swollen from œdema, with an increased temperature of the parts. The limb was carefully bandaged, and in twenty-four hours she was entirely relieved. She began to recover rapidly, and in ten days the abscesses had healed. January 7th, 1870, she was discharged, having fully recovered.

MILK AS A DIET DURING LACTATION.

BY ROBERT P. HARRIS, M.D., PA.

(Read before the Philadelphia Obstetrical Society, 1880.)

FROM a series of trials which I have very successfully made, and of which the three cases here given are recorded as examples, I have become convinced of the great value of milk as a food for delicate mothers who desire to nurse their own children. By the term "delicate" I do not mean those actually diseased, or apparently inclined to tubercular or other serious organic affections, but a large class of American women in the higher walks of life who fail as nursing mothers, either because their milk is too small in quantity or deficient in nutritive elements. Such women are generally below their proper average in weight; have little if any color in their cheeks; and eat but a moderate amount of food. There may not be any deficiency in the development of their mammary glands, although their mammæ are usually smaller than they should be; but this is chiefly due to the absence of adipose deposit. All such subjects do not bear a milk diet well; and in such the plan must be abandoned, as the diet should not only agree with the mother, but be palatable, so as not to diminish her appetite for her ordinary diet. She should be able to eat her three meals as usual, and consume the requisite amount of milk in addition. There are many women who have lost all their childhood's relish for milk, just as there are sometimes young children who do the same

thing, and cannot be made even to try its efficacy. And there are others who are anxious for success and do make the trial faithfully, but are reluctantly obliged to discontinue the diet in consequence, not of any disrelish, but of an inability to digest it.

Happily, there are also many who not only like the taste of milk, and can continue its use indefinitely, but who experience a wonderful degree of benefit from it, not only being able to nurse their infants, whom they would otherwise have to give to a wet-nurse, or raise by hand, but greatly improved in health and strength, gaining flesh, increasing in appetite, and avoiding the ills resulting from the drain upon their system, so commonly experienced after a few months of lactation.

The first case I shall mention is that of a lady who came from New York to put herself under my care, and was delivered in due time of her fourth child, a boy, weighing eight pounds. She was below medium height, pale, and weighed, on an average, eighty-six pounds. After the birth of her first child, a female, her milk failed in a few days, and a wet-nurse was called in. She nursed her second, also a girl, until it was about a month old, by which time the infant was so much wasted from the deficient quality of the lacteal secretion, that two days and nights constant care in feeding it with diluted cream and brandy every fifteen minutes, were required to give it the requisite strength to nurse from a healthy woman, and thus save its life. Precisely the same result attended the attempt to nurse her third child, also a female; and in a day after it ceased to draw upon the mother her milk dried up.

The fourth child, being a male, was a little larger than the previous children, and nursed more vigorously. When seven days old it became evident that he did not get nourishment enough, and additional feeding was resorted to for a short time. This affected his health so, that he had seven green passages in twenty-four hours. I then proposed to the mother to try the efficacy of a milk diet for herself, which she did, taking it as a drink, in small portions, several times a day. In two days her baby was entirely well, and she began to feel, for the first time in her life, a painful distention of the breasts. She improved steadily in health, and was soon able to be up and about the house. Her infant grew rapidly, and weighed thirteen pounds at two months, at which time she consumed two quarts of milk daily, and said that she ate in addition her full complement of food. She continued to nurse this boy until he was eighteen months old, and weighed twenty-six pounds, increasing her own weight at its maximum to 105 pounds, or nineteen pounds above her ordinary average. It is not necessary to say that there was a marked improvement in her health over what it had been for several years.

The second example I shall give is that of a tall, spare woman, wife of a merchant in this city, who had been dyspeptic for several years prior to her marriage, and whose average weight was from 106 to 112 pounds. Her infant was her first, a large boy, whose birth was followed by a considerable flooding, producing partial syncope. I commenced a milk diet in her case a few days after delivery, and with the most

happy results. Her breasts, from being small and flaccid, soon filled up, so that she was enabled to nurse with entire satisfaction. She took a pint of boiled milk morning and evening, and at noon a pint of broma, made with cream. Her son grew very large and heavy, and she increased so much that by the time she commenced to wean him her weight was 177 pounds. Being tall, and of large frame, this addition gave no appearance of grossness, but added materially to her healthful appearance and commanding presence.

The third case is that of another small woman, of an equal station in life with the other two, who seldom weighed above 100 pounds. She had lost one child in consequence of failure of her milk, hand-feeding and diarrhoea ending in convulsions. Her second child is now seven months old, and, as an evidence of the effect of milk upon its mother, weighs twenty-one pounds, which is a large weight for a female child. The mother nurses without any trouble or feeling of weakness, and has increased her weight to 116 pounds. She has a better appetite for her ordinary food than she has ever had, and this weight mentioned is the maximum of her life.

I have used milk in a variety of combinations, but think that the less farinaceous admixture it contains the better it answers the purpose for which it is designed.

ADIPOSE DEPOSITS IN THE OMENTUM AND ABDOMINAL
WALLS OF WOMEN AS A SOURCE OF ERROR IN
DIAGNOSIS.

BY GEORGE PEPPER, M.D., PA.

(Read before the Philadelphia Obstetrical Society, 1869.)

ALL authorities, who allude to this subject, agree in stating that excessive deposits of fat in the abdominal walls and omentum of women, at or about the menopause, may become a source of doubt or error by simulating pregnancy or some abdominal tumor. But while most give this general statement, few enter into any discussion of the causes or effects of such deposits, or confirm their teachings by illustrative cases. Within the past few years three such well-marked instances of this condition have come under my observation, that I have thought them worth recording.

CASE I.—Mrs. S——, æt. 50; mulatto; married, and living with her husband; the mother of several children. Had ceased menstruating a year or more before she came under my care, in the spring of 1866, for profuse metrorrhagia, which had come on without any assignable cause, and had persisted for several months in spite of the various internal remedies employed. She was emaciated, anæmic, and very despondent; her appetite was fair, and all the other functions were performed normally. On vaginal examination the uterus was found enlarged and heavy, with its tissue unusually dense and hard; it was but slightly sensitive on pressure, but decidedly less movable than normal. The

uterine sound readily passed in (over 3 inches) in the normal direction, but its withdrawal was followed by increased hemorrhage. During the absence of hemorrhage the muco-purulent discharge from the cavity of the organ was profuse. There was no lesion of the mucous membrane covering the cervix. With the exception of an astringent salt of iron, administered internally, the treatment was entirely local. The hemorrhages were checked from the first, but the purulent discharge was very obstinate, and did not yield entirely until after several months' treatment. She rapidly gained flesh and strength after the first few weeks, and continued to improve until, at the end of 6 months, she seemed entirely well. From this time I heard nothing of her until about 6 months afterwards, when she called on me and told me that she was 8 months advanced in pregnancy; that her mammæ were enlarged; that she had felt foetal movements, and, in fact, she stated that she presented all the symptoms experienced while carrying her children. On palpation the abdomen was found fully as much enlarged as at full term, quite tense, and resisting. No fluctuation or solid growth could, however, be felt, and no auscultatory phenomena were audible. On vaginal examination, the uterus was found to occupy about its normal position, to be rather dense and heavy, but not materially enlarged, the sound entering barely 3 inches, causing no pain nor discomfort, and its withdrawal being followed by no discharge. There was no tumor nor induration felt in the pelvic cavity; but on attempting to measure the thickness of the abdominal walls by bimanual examination, they

were found to be at least 8 inches in thickness in every direction in which this attempt was made. There was also increased adipose deposit in the mammae, and, to a very limited degree, over the whole body. Her diet was regulated, and her anxiety allayed by positive assurances that there was nothing wrong, and she has since remained entirely well. The size of her abdomen has decreased considerably, and it appears as if her anxiety in regard to her pregnancy had been the cause of the trifling disturbances she had experienced, as all her uncomfortable feelings, as well as the supposed foetal movements, passed away after she was reassured.

CASE II.—Her daughter, æt. 26; married; had one child several years ago, after a fearfully difficult labor, and has been in poor health ever since, suffering from symptoms of chronic uterine disease, for which she placed herself under my charge early in the autumn of 1867. I found much the same condition as has been described in her mother's case, except that the menstrual discharge was scanty, while the muco-purulent uterine catarrh was much more profuse. The pelvis was slightly contracted antero-posteriorly, and its depth anteriorly decidedly increased. Her husband had contracted a chancre while away from home, which had so mutilated his penis that intercourse was almost impossible, and he himself seemed so thoroughly ashamed of his condition that I believe he never even attempted coïtus. Her case was more obstinate than her mother's, but finally yielded to treatment. After leaving my hands she was employed as nurse to an infirm and aged lady, and for some months I did not hear from her. Last autumn,

1868, she came to my office, when I was astonished at the enormous size of her abdomen. I at once suspected pregnancy, but, on questioning her, found she was menstruating regularly, and that, with the exception of a slight mucous vaginal discharge, she presented no evidence of uterine ill health. She stated, that for the last 8 or 10 months her abdomen had increased steadily in size, but that, with the exception of the feeling of distention and the inconvenience from the bulk, her health seemed better than it had been for years. She was much alarmed at her condition, being convinced that she had ovarian dropsy, and begged me to examine her. I found the whole body well covered with fat, the mammæ large and full, the abdomen prominent and resisting, with bulging of the flanks, entire dulness on percussion, and apparently distinct fluctuation. The skin was tense and shining, and presented numerous well-marked lineæ albicantes. On vaginal examination, the uterus was rather large and heavy, slightly prolapsed, and less mobile than normal. Still, the organ was non-sensitive, and its cavity did not measure more than 3 inches in depth. The excavation of the pelvis was free from any tumor, though it felt padded, and diminished in all its diameters by adipose deposits. The abdominal walls, as measured by the finger in the vagina and the hand on the abdomen, were enormously increased in thickness, and there was, in addition, an obscure doughy sense of resistance, evidently due to fatty deposition in the omentum. She was ordered an abdominal supporter, and directed to avoid as much as possible saccharine, amylaceous, and oleaginous articles

of diet. She has since diminished materially in size, so that the inconvenience is greatly relieved, while her general health continues excellent.

CASE III.—In January, 1869, was called in consultation to see a woman, æt. 45; married; the mother of several children, the youngest of whom is now 8 years old. She has miscarried once since, soon after its birth. Last May she menstruated as usual, but thought that for two months before that time she had noticed some unusual symptoms low down in the abdomen. The next menstrual discharge was very scanty, a mere stain, lasting only 24 hours. After this she began to increase in size, and as her menses did not reappear she thought herself pregnant, and engaged her physician. Soon she began to feel movements in the abdomen, such as she had felt with her former children. They were ill-defined and confused, but still of such a nature as to leave no doubt in her own mind that she had quickened. There were no sympathetic, gastric, or mammary disturbances, but these had been absent during her previous pregnancy. She continued to increase in size until a short time before my visit, and had become very anxious about her condition. The general health seemed excellent in every respect, and it was merely a dread of some impending evil that caused her to seek medical advice. The abdomen was very large at all times, but, when occasionally distended by flatus, she suffered considerable distress. The bowels were regular, but with a tendency to flatulence. The urine was voided in normal quantities and at proper intervals. On vaginal examination the uterus was found very high up, undergoing

senile atrophy, and apparently perfectly healthy; the sound entered in the normal direction barely two inches, and caused no pain nor discharge. The pelvic cavity was cushioned with fat. The abdominal walls, enormously thickened, were soft and doughy. On abdominal palpation no solid mass could be felt, nor could any fluctuation be detected; the skin was tense, shining, and covered with old cicatrices. The abdomen was prominent, rounded, and changed its contour but little with change of position. She was ordered rhubarb, strychnia, and belladonna for the condition of her bowels, regulated diet, and a comfortable abdominal supporter. She passed from under my observation, but I hear is still in excellent health, though no smaller.

These three cases have been the most marked examples I have seen of the condition to which I refer, although slighter degrees of the same deposit have from time to time presented themselves. In all three patients considerable anxiety had been caused by the phenomena described, and in two instances they firmly believed themselves pregnant, so that one of them even had engaged her accoucheur. The third fancied herself the victim of ovarian disease, and was beginning to fail in health, owing to the ever-present dread this thought inspired. In the first case, the excessive deposition of fat took place at the termination of the menstrual life, and after an exhausting uterine hemorrhage had been checked; in the second, after the cure of a profuse purulent uterine and vaginal discharge; whilst in the third, after a rather unusually abrupt cessation of the catamenia. In all, some accustomed discharge had ceased;

and in all the deposition of fat took place principally in the abdominal walls, and probably in the omentum and various tissues of the abdomen and pelvis, without materially implicating other portions of the body. It appears improbable that, in any or each of these three cases, the enlargement of the abdomen could have been merely an accidental concomitant, for it so promptly followed the cessation of the habitual discharge, and continued to increase so regularly for a time, and yet came to a stand-still, or diminished, without any material aid from treatment. In addition to all this, when we consider, in this connection, the numerous recorded instances where, after frequently repeated venesections, individuals, although debilitated and almost exsanguine, still became corpulent; and when we observe, almost daily, patients who, after surgical operations for the removal of diseases accompanied by profuse suppurations, become very fat, although they may not regain their health and strength for months, it certainly seems more than a mere coincidence, and must bear the direct relation of cause and effect.

The so-called "change of life," that subtle change by which woman is unsexed, accompanied as it is by the often sudden cessation of an habitual hemorrhage, seems to exercise some most important modifying influence upon nutrition, either for good or evil; and is the starting-point of various nervous and constitutional diseases more frequently than would be accounted for by the mere age of the individual. It is difficult to explain clearly why such discharges so modify the nutrition of a part, that the economy, after their final cessation, attempts to

provide, as it were, an outlet in an excessive formation of adipose tissue confined to a particular set of tissues. The dictum enunciated by physiologists, "that every part of the body stands to every other part in the light of an excreted product," might, I think, be applied to the cases in point. For when the economy has been accustomed for months or years to preserve the balance of health in spite of profuse discharges, and all the organic functions have accommodated themselves to this normal or abnormal condition, it seems probable that, should this discharge suddenly be suppressed, the surplus nutrition would seek some outlet or expression, and that adipose tissue, one of the lowest grades of tissue formation, should be the result; and also that such deposition should be located in a part of the body most directly connected with the accustomed outlet by both vascular and nervous supply.

The diagnosis of these conditions should be made only after a careful consideration of the history, and a thorough physical examination of the patient; for only by such a combination can an intelligent opinion be formed. The fact of a recent suppression of the menses, or of some other habitual discharge, and, coincidently with this, the abdominal enlargement, must strongly direct suspicion, especially if from her age, or other circumstances, it would appear improbable that the woman had conceived. As a rule, the more profuse the discharge has been, and the more sudden the cessation, other things being equal, the greater will be the deposit of adipose tissue, and the more profound the psychical impression on the patient.

This condition differs essentially from the so-called "spurious pregnancies," or "phantom tumors," so ably described by Simpson and others,—these being probably due to uterine or ovarian excitement, which induces a state of excessive nervous mobility more or less allied with the condition called hysteria. The abdominal enlargement here, instead of being due to an absolute deposit or growth, appears to be entirely under the control of the nervous system. The mode of causation is explained in several different ways, and probably certain cases may be properly accounted for by some one of the theories advanced, while in other instances the various causes may merely play the part of factors. The views which have the sanction of the highest authorities are probably the following: (*α*) Arching forward of the lumbar portion of the spinal column, thus causing the abdomen to protrude; (*β*) relaxation, from sympathetic irritation, of the muscular walls of the intestines and their distention with flatus; and finally, (*γ*) a firm tonic contraction of the diaphragm, forcing the abdominal viscera downwards and forwards. Certain it is, whichever of these be adopted,—and the last seems to be the more probable,—that complete anæsthesia will entirely dissipate the apparent tumor, and thus render the differential diagnosis positive.

Of course these fatty deposits could not be mistaken for pregnancy where a thoroughly satisfactory examination had been made; but a positive opinion could scarcely be given with safety where a physical exploration had been refused, or was otherwise rendered impossible, if the increase in size had been gradual, and

accompanied by the cessation of the menses, and by the nervous phenomena already alluded to, especially if the woman have been subjected to the risks of impregnation. Indeed, it is often exceedingly difficult to satisfy one's self of the true nature of the case from the mere history, for not only do the various symptoms tend to confuse, but the positive assertion of the patient is also calculated to mislead, since women who are anxious for offspring, or who dread the occurrence of pregnancy, are naturally often led to allow their hopes or fears to bias their judgment. As before said, a positive opinion cannot safely be given save after at least a most careful external examination, when the non-existence of the ordinary mammary changes, and of any defined uterine tumor, taken in connection with the sunken umbilicus, and the entire absence of the usual auscultatory phenomena, ought to be sufficient. While, if it be possible to obtain a vaginal exploration, the want of all the so well known signs of pregnancy will still more positively negative the supposition; for we have, in those cases occurring towards the close of sexual life, senile changes commencing, the uterus being small, light, and atrophied, the vaginal portion of the cervix partially absorbed, and the whole organ carried high up in the pelvic cavity from its diminished weight, or, as has been stated, from shrinking of the ligaments, while the walls of the pelvis and tissues generally are padded with fat, and the abdominal parietes enormously thickened from a similar deposit. When, however, this adipose deposit occurs after the removal of some morbid condition, as in Case II., the uterus will often still

show the results of the previously existing disease, and may become variously altered in shape, size, or consistence.

It is not, however, in the differential diagnosis of pregnancy that the most serious difficulties present themselves, but in that of ascites, ovarian disease, and abdominal tumors generally. In ovarian disease we have, in addition to the almost characteristic appearance of the patient, a history, very frequently, of pain or discomfort experienced in one or other ovarian region before the appearance of the abdominal tumor; and very often the patients are able to *define* the mass clearly, and state that it first made its appearance in some one particular portion of the lower abdomen; attacks of localized or general peritonitis are also quite common during its growth, and the signs of pressure are very early manifested. These symptoms, taken in connection with the absence of increased embonpoint, and the evidences of seriously impaired health, are sufficiently characteristic. One source of error must, however, be guarded against, namely, the fluctuation, which is often very distinct in these fatty accumulations, the wave being apparently freely transmitted; but, by the ordinary precaution of depressing the median line of the abdomen, not only are the vibrations of the abdominal walls entirely done away with, but no interference with the transmission of the fluctuation will be produced if fluid be present. On vaginal examination in such cases, we find the uterus at first generally pushed forward and to one side, while the ovarian mass can often be distinctly localized by the various means

within our reach. After the mass has increased in size still further, the detection of fluctuation through the roof of the vagina, if the tumor be cystic, the increased displacement of the uterus, and the pressure signs already alluded to, will fully clear up the case. Still, though apparently so readily distinguished, yet when, in addition to the adipose deposit in the abdominal walls, the omentum is loaded with fat, the diagnosis becomes much more obscure; indeed, instances are on record where the abdomen was opened in the expectation of finding an ovarian tumor, and the mistake only discovered when the patient had been subjected to great mental anxiety and physical danger.

Fibrous tumors of the uterus, and other tumors of the abdominal cavity, have each their respective symptoms, and can scarcely be mistaken, except in those instances where many of the signs are obscured by the presence of ascites. Here, the uniform enlargement, the bulging flanks, the fluctuation, the entire dulness on percussion except over the floating intestine, the position of this dulness varying with the patient's posture, the descent of the vaginal cul-de-sac, and the fluctuation detected from the vagina, when taken in connection with the positive symptoms of hepatic, renal, or other organic disease, suffice to render a diagnosis easy.

I have seen one instance of a condition in which, at first sight, the patient presented many points of resemblance to these cases of fatty deposition. The woman had borne many children and had reached the climacteric period; her abdomen was very large, protuberant, and pendulous; she suffered from a great "sense" of

weakness," and was unable to attend to her domestic duties. On careful examination, it was found that the recti abdominales were widely separated, and the stretched linea alba formed one covering of an immense hernia, which allowed most of the intestines to escape outside of the ventral parietes proper. Here the gurgling of the intestines, the drum-like tympany over the tumor, and the well-defined edges of the recti sufficiently indicated the nature of the condition. The condition generally requires only to be detected to be cured, the morbid phenomena being most frequently caused by the apprehension of some serious disease or the belief in the existence of pregnancy; and if the patient can be convinced of the groundlessness of her fears, it is generally all-sufficient. A few cases, however, present themselves where a modified diet scale, a diminished amount of fat-producing food, and the use of gentle and regulated pressure are indicated. With these exceptions, I believe such cases can be left to nature, with a conviction that, when the economy has become accustomed to work at lower pressure, either that there will be no further increase, or even a positive diminution, in the deposit of adipose tissue.

THE PATHOLOGY AND TREATMENT OF MEMBRANOUS DYSMENORRHOEA.

BY DR. F. MANDL, Vienna.

(Continued from page 422, Vol. II.)

THE *treatment of dysmenorrhœa membranacea* contains as yet, like its science, many unanswered questions; for its therapeutical part has not yet been instituted, as is evident from the history of our case, where we find that a malady, affecting a forbearing patient for years, defies the earnest exertions of trusted specialists.

The English gynecologists employ an energetic method of treatment during the menopause, for the purpose of avoiding a relapse, and of removing simultaneously the sterility. They recommend the use of the bromide and iodide of potass. of mercury cauterizations of the uterine cavity with the nitr. of silver, injections of tincture of iod., and other alterative remedies.

The German school prefers, as much as possible, an indifferent medication. Tonics, especially the preparations of iron, are advised; also local depletions before the appearance of the menses, both for the removal of the dysmenorrhœal attack, and for the cure of the malady. In order to give in a few words to our readers an outline of the treatment at the present time, we quote the words of *Scanzoni*, who in his work, p. 294, says: "In order to reduce the above-described hypertrophy, and to prevent the separation and expulsion of the mucous membrane, there has been urgently rec-

ommended, in addition to the before-mentioned remedies, especially cauterization of the inner surface of the uterus with the solid nitr. of silver stick, and injections of astringent liquids into the uterine cavity. We have used these means for months, but we were unable to obtain a cure, while frequently the congestive symptoms were increased. For the present, we restrict ourselves in such cases solely to the employment of the topical antiphlogistic treatment, which, if of no use, is at any rate reliable, and does no harm."

Now with special regard to our patient we had to deal, as said before, with an antroversion of the uterus, with the monthly pseudo-membranous secretions, and with an intense consecutive disturbance of the general health, showing itself under the most manifold forms of hysteria, hyperæsthesia, and hystalgia.

We therefore tried as much as possible to conform our treatment to these complicated indications, and, we might confess, we encountered difficulties which we could not entirely remove. In our patient the antroversion was so very decided that a large portion of direct and reflex neuroses, as well as the disturbances of the abdominal circulation, had to be ascribed to it. We tried to lessen this forward displacement of the uterus by a suitable pessary, which it was very difficult to do; as of those instruments in use neither the intra-uterine, nor the lever, nor the hard eccentric pessaries seemed to answer the purpose. We did not dare use *Martin's* intra-uterine regulator, of boxwood and ivory, in this case, on account of the decided relaxation, yielding, and continued painfulness of the accessible uterine portions.

Hodge's pessary hardly improved the dislocation. The eccentric hard pessaries were not tolerated. In the same way a "*ceinture hypogastrique*," employed on a former occasion, gave no relief whatever. In order to accomplish our object, we caused a funnel-shaped ring to be made of gutta-percha, the margins of which stretch like the brim of a hat over an eccentric air pessary which encircles the ring. Such a pessary was introduced airless, and then extended by a pair of elastic bellows, which could be connected with the pessary by a small elastic tube. The instrument having been introduced easily, its broadest part was pushed against the sacrum and the cervix passed into the ring without difficulty. This instrument lessened the dislocation decidedly, and was also well borne by the patient. The fundus of the womb, in its desire to incline forwards, raised the cervix backwards and upwards, thus fixing that portion of the pessary inserted between the cervix and posterior vaginal wall, requiring always a certain degree of force to remove it. We used this instrument for four weeks. The position of the womb was then improved so much that it did not bend completely forward until twenty-four hours after the removal of the pessary. One unpleasant circumstance we could not obviate in using this instrument, viz.: the bad odor it caused after six to eight days' use. We employed afterwards Meyer's simple caoutchouc rings, which also could be easily introduced. These rings were well borne by the patient, and improved the position of the uterus considerably, although not quite as well as the air pessary. The patient continued wearing the ring while

she was under our care, a new one being introduced after each menstruation, on account of the bad odor. By improving the position, every symptom caused by it was also diminished. The tenesmus of the bladder, sensibility of the urethra on pressure, feeling of pressure upon the rectum, and the sensation of a heavy bearing-down body were lessened; no other symptom, however, was influenced by the reposition of the uterus.

We attempted to relieve the *dysmenorrhœal paroxysms* by the use of various means; no palliative, however, gave any relief. Leeches having been applied already by Prof. *Matwejef* to the neck of the womb, we omitted this prophylactic, as it did no good then, and especially as we found the patient in a high state of anæmia.

In order to prevent a *renewal* of the *monthly membranous growths*, and to alleviate their effect, we were of the opinion that the general health required a symptomatic and palliative consideration, but that a real improvement, even of the general health, could only be attained by removing the cause—the uterine affection, as the disease producing these excessive growths, as well as the monthly disturbance, necessarily exercised a deleterious influence on the general health. We hoped to accomplish this purpose by a method acting alteratively and directly on the proliferating uterine mucous membrane; for this purpose we chose the chlorate of potass, as this remedy is known to possess a decided influence on the liquefaction, degeneration, and resorption of epithelial growths and pseudo-membranous exudations

in the different affections of the mucous membrane. For this purpose the chlorate was, after November 30th, 1868, introduced every other day into the uterine cavity in the solid state, by means of the salve applicator; in consequence of which we had occasion to report several interesting data occurring in the course of the disease.

The introduction of a remedial agent into the uterine cavity, of whatever kind and nature it might be, is always to be considered an important interference. Therefore, before we continue in the narration of our case, it will be proper to make a *few remarks on the introduction of medicinal substances*, and thus to specify more in detail the method employed by us, as the application of medicinal agents to the uterine mucous membrane in the shape of a crayon is very well known but not yet introduced into general use, and as the success of a method frequently depends on some slight and apparently insignificant cautions.

The favorite and mostly used remedy, as well as the most liked and preferred method, is the employment of the nitr. of silver. For this purpose the porte-caustique of *Lallemand*, *Kiwisch*, *Chiari*, and *Scanzoni* is used, of which that of *Chiari* is, however, the most practical. There is indeed no other remedy the use of which is so convenient or less void of evil consequences, which explains its extensive use. In those cases, therefore, where a slightly stimulating or alterative action is desired, as in superficial erosions of the cervix, or in very slight hemorrhage from the uterine mucous membrane, or in separations of epithelium, or spongy granu-

lations, as after an abortion, the application of the nitr. of silver is of excellent service. As soon, however, as the action of the cautery is intended to be deeper, or a stronger hæmostatic effect appears to be necessary, the nitrate remains ineffectual, because after its introduction it is immediately covered with an impervious layer of chemically altered mucus. In very numerous cases where nitr. of silver is applied to the uterine mucous membrane we often observe intense pain and occasionally hemorrhages, and we were inclined to ascribe their cause to the remedy itself. We have, however, become convinced that this effect is not due to the action of the lunar caustic itself, but rather to the porte-caustique constructed in the shape of a probe, by which we cannot avoid in spite of the greatest care to touch the fundus uteri, which causes very intense pains; even the hemorrhages are not to be ascribed so much to the caustic as to the instruments used in its application, just as we observe it occasionally after the introduction of the ordinary probe. Ever since we introduced the nitrate of silver only just beyond the inner os, to leave it there, we have seen very little pain following its use. It took at times a couple of days until the piece of caustic left inside the womb, and the chemically altered mucus with particles of nitr. of silver were expelled. Among the most important methods to employ caustic remedies in the uterine cavity we count the intra-uterine injections, and they take the first rank among the caustic, hæmostatic, and other therapeutical applications; the best authorities either praise them as being very effectual or call attention to the dangers following the application.

Most of the hand-books of gynecology speak of these dangers, and prescribe certain cautious procedures to be employed in order to avoid these accidents. Thus *Scanzoni* throws the liquid forcibly against the fundus uteri, in order to avoid in this manner its entrance into the tubes and to secure its free discharge. This is, however, a very uncertain proceeding and difficult of execution, since the uterus is very apt to contract around the syringe and thus to prevent the exit of the injected liquid.

Credé called the attention of the forty-second meeting of German naturalists and physicians in Dresden, in 1868, to the dangers following with the different intra-uterine treatments.

Dr. *Maennel*, of Dresden, mentioned on this occasion the happy results obtained by intra-uterine in Prof. *C. Braun's* clinic. We did, however, not perceive any confirmation of his statements after listening to a lecture of Prof. *Braun* delivered at his clinic. The following is a *résumé* of Dr. *Braun's* views on this subject:—

“Prof. *C. Braun* declared that intra-uterine treatments were always dangerous whenever the internal os had not been previously dilated. The danger consisted in the constriction of the os internum around the internal canula, in consequence of which the liquid could be easily passed into the tubes and the peritoneal cavity, giving rise to spasmodic pains and circumscribed peritonitis, which had often been taken for simple colic, or even to fatal peritonitis. We found that the mucous membrane of the uterus would tolerate cauterization better than that of the vagina, while a drop of pure warm water injected into the tubes or the peritonæum was followed by a very painful and violent reaction. With the greatest care which we observed when using the small intra-uterine syringe,

even two or three drops of a neutral liquid injected over the necessary amount were sufficient to produce violent reaction. Therefore Dr. *Braun* cannot speak favorably of intra-uterine injections; he therefore recommends to proceed with the greatest care during the application."

Without venturing to compare our own experience with those who command such an extensive material of observation, we must confess that a few accidents have made us very careful in the use of intra-uterine injections. We recollect a case that occurred under the care of Dr. *Vrikschik*; a solution of nitr. of silver was injected into the uterus of a patient suffering from menorrhagia, violent pains occurred after the first injection, and the patient died with symptoms of intense inflammation, and a post-mortem examination showed the existence of purulent peritonitis. In another case we injected a weak solution of tannin, on account of chronic uterine blenorrhœa, by means of a "soude à double courant." The patient, a young healthy woman, became suddenly deathly pale, and was seized with abdominal pains; this condition lasted for ten to twelve hours, and terminated without any disastrous sequelæ after a week's sickness. We have made no further frequent attempts with intra-uterine injections, since we have observed on several occasions severe uterine colic after their application, and it is our general impression that the young practitioner cannot be careful enough in their application, since they are followed occasionally by cellulitis, peritonitis, metritis, and endometritis.

The former remarks are, however, not intended to deny all therapeutical value of this method of treatment. The syringe of Prof. *C. Braun*, a modification

of *Pravatz's* instrument for intra-uterine injections, can be highly recommended, and has the decided advantage that the liquid is rather pressed in, drop by drop, than injected, and that with proper care a sufficient time remains for its discharge.

In a woman who has passed through several confinements, whose internal orifice is sufficiently open, and the uterine mucous membrane of whom is secreting profusely, we will certainly find a great tolerance for applications of a mechanical nature. In cases of this kind a number of injections can be made with Prof. *Braun's* syringe without producing any evil consequences. It is, however, different with flexions of a high degree, or in cases where the uterus has never been pregnant, and is as yet in the virgin condition. Under such circumstances, the canula of the syringe passes through the cervix with a certain amount of resistance, the walls of the uterus, as well as the inner os, are apt to contract from the unusual irritation, and the liquid injected is easily forced against the tubes, and the accidents mentioned above are easily produced.

Sims has abandoned entirely injections into the uterine cavity, because he has violent and alarming attacks of colic follow the injection of a few drops of an indifferent liquid; of late, however, he again employs them after dilating the inner os by means of sponge tents, according to Dr. *Savage*, in order to permit the injected liquid to be thoroughly discharged.

Prof. *Sigmund* published in the year 1853 a paper on the treatment of blenorrhœa and pyorrhœa by the application of caustic remedies to the inner walls of the

uterus. He employed the following method : " First the canal has to be explored by the sound, it must then be dilated by sponge tents and thoroughly cleansed by lukewarm water, whereupon the caustic solutions are to be injected." He employs for these injections $\frac{1}{4}$ dr. nitr. argent. in 3 ounces of water; further, 1 dr. of sulph. cupr., 1 dr. of perchl. ferri, 2 dr. chlor. zinci, each dissolved in 3 ounces of water.

He states with regard to the therapeutical effects of the cauterization, that 6 per cent. had been taken with peritonitis, and that the injections deserve only a restricted application, as a local means for the treatment of blenorrhœa and pyorrhœa of the uterus, because by their application alone a cure was rarely effected.

This method of injecting is therefore not to be recommended in all cases. Astringent and caustic injections for the cure of blenorrhœa must be often repeated for several months; the cervical canal cannot be dilated for each application, and the dilatation of the cervix by means of sponge tents or laminaria ought not to be undervalued as regards its effect on the system, especially in cases of a multiparous uterus. Severe pains which lasted occasionally for weeks, cellulitis, and metritis have followed repeated attempts at dilatation.

Dilatation of the inner os by means of compressed sponge or laminaria, finds its most important application and value in cases of obstinate hemorrhage, granular, fibrous, and polypous excrescences. In cases of this kind, the use of compressed sponges in itself is often sufficient to remove the above-named conditions, in consequence of a pressure exerted upon the walls of the

uterus; the free evacuation of the injected liquid is to a certain degree a safeguard against its passage into the tubes, and it has therefore a certain value under similar circumstances.

Among the methods usually employed, the one advocated by *Becke*ver for the cauterization of the cervical canal we have found to be of great value for a certain number of cases.

To make these caustic applications we employ *Ditel's* porte-remèdes, constructed by Mr. Leiter. This instrument consists of a canula made of hard rubber or silver, which contains a mandarin, the upper pointed end of which reaches beyond the open mouth. We have modified this instrument for gynecological purposes by giving it the shape of a uterine sound, and providing it with a protruding edge $1\frac{1}{2}$ inch below the upper end. Thus we secured its passage into the cavity beyond a certain limit, thus keeping the fundus uteri from being touched by the instrument, which is very painful and gives rise to hemorrhages. The remedy to be employed is passed into the upper end of the canula in solid form, and about 2 inches in length, whereupon the instrument is introduced into the canal, and the medicated stick pushed into the uterine cavity by a forward movement of the guide contained within the canula.

This method of application has several advantages: it is applicable for those cases where the remedy has to be used repeatedly; the dose of the remedy can be well defined and modified according to circumstances; it can be thoroughly applied to the mucous membrane of the uterus, because it remains in a more prolonged con-

tact with the same than injected liquids, so that caustic and hæmostatic remedies are made to act more intensely, and harder substances have more time to absorb liquid for their solution, for developing their resorbing and alterative influence on the mucous membrane.

Every medicine which is applicable to a sensitive mucous membrane can be employed in this manner. We have use of nitr. argenti, tannin, kali chlor., perchlor. ferri, præcipit. rubr., sulph. ferri, sulph. cupri, etc. With many of these substances, such as perchlor. ferri, kali chlor., it is difficult to transform them into a solid mass; the best means of accomplishing it is the addition of glycerine, amylum, or tragacanth. The sticks from $\frac{1}{4}$ –1 inch in length. It is certainly of importance even in employing this method to ascertain beforehand the amount of irritability of the uterus. The first application contained only small doses of medicine. In two cases of hemorrhage which lasted three to four years, and in which nothing but a spongy condition of the mucous membrane could be found, three applications of solidified ferrum perchlorat. sufficed to stop the hemorrhage. The application of this medicine produced pains for twelve hours, which were diminished by the use of cold applications and injections; after twenty-four hours a profuse mucous secretion was established, consisting principally of iron and blood corpuscles, which lasted for four days. The next menstruation was regular and less profuse, the applications were repeated twice before the expected catamenia, and each time with the same effect. With the third application the excessive flooding had ceased. The patient, a carpenter's wife,

has been healthy ever since. Tannin and sulph. cupri are also apt to cause severe pains, lasting occasionally for twenty-four hours, when these remedies are employed in large (5 gr.) doses; these accidents could, however, always be controlled by the use of cold applications and small doses of morph. By the use of tannin a very obstinate uterine leucorrhœa, which had resisted all kinds of treatment for ten years, was perfectly cured after two weekly applications employed for six months.

We mentioned above, that from the 30th November we employed in our patient a stick of kali chlor. every other day; the applications were borne very well; they caused very little pain immediately after their use; occasionally, however, a certain amount of pain was experienced a few hours later, a plug introduced immediately afterwards was removed eight hours later, and it was found to be moistened, of a dark-brown color, covered with black points and streaks. These black spots were due to the influence of the kali chlor. upon the particles of blood mixed with the secretion; this admixture of blood we ascribed to the irritation produced by the introduction of the stick. During an application immediately before the occurrence of menstruation we were able to verify the view just mentioned, viz. : the alteration of the coloring substance of the blood into a brownish or black substance by the contact with kali chlor., since we found the plug covered very extensively with black masses. We further ascertained this fact by experimenting with kali chlor. on blood drawn from the body. After a few injections with lukewarm

water, part of the kali chlor. came away during the first twelve hours with the water in small brittle or liquefied particles; frequently, however, the entire amount was absorbed. The first four or five applications produced no further effect, and it was not until the sixth day the patient complained of pretty severe bearing-down pains and dysuria; when finally, twenty-four hours after the sixth application, suddenly four or five rolled-up, isolated yellowish-red membranous shreds, half a centim. wide, one and a half centim. thick, five or six centim. long, were discharged without being accompanied by the slightest hemorrhage. The nervous excitement was naturally very intense.

The microscopical examination showed amylon corpuscles derived from the stick.

Some of these shreds were handed to *Professor Rokitansky* for examination.

8. *Statement of Prof. Rokitansky.*

"The presence of starch corpuscles and other particles of a vegetable character is explained: they are derived from the matter used in preparing the kali chlor. paste; the membranous shreds must be considered to be of an epithelial (animal) nature; they consist of slender polygonal epithelial cells arranged in several layers. They are no doubt a production of the uterine mucous membrane regenerated after the discharge of the decidua. In view of the rare occurrence of such cases, it is of importance that I remember now to have examined some time ago uterine discharges out of all connection with conception or menstruation, which consisted of a similar epithelial formation. The considerable size, or rather length, of the shreds is undoubtedly owing to an enlargement of the uterine cavity; considering the excessive menstrual formative impetus of the uterus in question, I am inclined to believe that this extra-menstrual formation must be

caused by the unusual irritation. The pigment found upon the shreds must be explained by the effect of the kali chlor. upon small excoriations of the mucous membrane."

The occurrence of these discharges encouraged us to continue the applications, which was done; but the next application was followed again by severe pains, which lasted for two days, until a profuse mucous secretion from the uterus was established; the secretion was of a dark yellow hue, odorless, and lasted for two days, whereupon menstruation set in six days before it was expected.

Rokitansky examined this discharge, and made the following statement:—

9. "I have examined the stains in the pieces of cloth sent to me. There was no trace of pus, but particles which resembled those observed in the membranous shreds, distorted, broken epithelial cells; and, further, a large amount of fat in small and large globules" (the fat was derived from suppositories containing butyr. cacao).

The next menstruation was copious, lasting eight days. During the first days blood coagula escaped, but *no trace of a membrane could be discovered.*

During this period 8 gr. of iod. potass. were administered daily by the mouth; the patient also took frequently a bath containing 1 oz. of kali caust. The pathological product, the membrane, not appearing during menstruation, encouraged us to continue this method of treatment, and we recommenced the local application two days after the cessation of the menses. The reaction following the first three introductions has already been mentioned; the fourth application again

caused greater pain, restlessness, etc., after twenty-four hours, and was followed by the *expulsion of a bag-like rolled-up membrane, the fundus of which was of a dark-brown color*; in addition to this, *another membranous lump* was found on the tampon, introduced close to the os, a few hours after the above-mentioned membrane had come away, the escape of which the patient noticed on account of previous uterine contractions. We were indeed surprised to find in these extra-menstrual excretions a newly developing decidua. As the time, eight or nine days, was too short to suppose an already regenerated uterine mucous membrane, we again requested Prof. *Rokitansky* to make a thorough examination of this formation, the result of which is given in the following note:—

10. "The specimens sent me December 30th consist of two red-brownish lumps, one of which, on being unrolled, proves to be a perforated villous membrane resembling the bicorned roof of the uterine cavity; the other forms a conical membranous cap, to the roof of which is attached a grayish-white striated mucous mass. This latter is indeed thick mucus infiltrated with free granular detritus, on some places with a brown-yellowish pigment, and finally with free nuclei, which are in some spots largely accumulated, forming those white striæ. There are also found a few epithelial cylinders without appreciable fimbriæ; and finally some vegetable fibres, derived probably from linen (lint tampon). The rusty colored membranes are, on that surface which is covered with mucus, more whitish, rather smooth, but still showing moist grooves in close juxtaposition. The other surface appears like a honeycomb, consisting of shallow open cells. These membranes consist of epithelial cylinders imbibed from pigment, without appreciable fimbriæ. Numerous cells contain two nuclei."

Thus we had an exfoliation of the epithelial lining of

the uterus, which, if we might be allowed to account for the loss of the fimbriæ by maceration, consists of the normal uterine epithelium.

We now tried to ascertain whether, if the expulsion of an extra-menstrual membrane had taken place, we had also interfered with the menstrual proliferations. For this purpose the introduction of kali chlor. was suspended. On the 12th of January, however, menstruation, with all the symptoms already mentioned, ensued, *with an expulsion of several membranous shreds*; five larger membranes which did not fit each other, a few smaller ones, as well as some blood coagula of the size of a hazel-nut, came away. On the fourth day intra-menstrual pause lasting for two days, followed by a renewed loss of blood for three days. The interval between the expulsion of the extra-menstrual membrane and the appearance of the catamenia, about fourteen days, sufficed to bring about the menstrual separation of a fully developed membrane; the structure was the same as on former occasions; in confirmation of which, we again quote *Professor Rokitansky*, of whom I received the following lines:—

11. "The pieces lately sent me consist of two distinct substances; first, membranous shreds: these are mucous membranes of the uterus in a state of menstrual development; the inner surface lining the uterine cavity shows the characteristic little grooves, *i.e.*, the ostia of the prolonged uterine glands. The outer surface is rough, of a villous appearance. This is caused by real villous-like attachments, which, however, are not the villi of a chorion, but the detached glandular tubes or portions separated from a layer of mucous membrane still remaining united with the uterus. There are, secondly, clotted and band-like blood coagula. There has consequently again begun the original pro-

cess of an expulsion of a menstrual decidua proper, or of a uterine mucous membrane developed into a decidua in toto, with the exception of the deepest layer retained within the uterus.

"If nothing else came away but the pieces sent me, there must be still considerable portions of the inner surface from which no membrane was separated."

After this period we began to introduce the kali chlor. regularly every third day. We could only make the introduction four times; no further extra-menstrual membranous secretions took place; the applications were again followed by the already-mentioned copious secretion from the uterine cavity, containing the morphological elements described by *Rokitansky*. After the fourth application the sensitiveness of the uterus and its appendages became greater; the discharge very copious. Already, on January 29th, menstruation ensued, the pain diminishing at the same time; it was very profuse, requiring a change of linen seven or eight times daily; in the first day expulsion of several blood coagula varying in size from a bean to that of a hazel-nut. The flow of blood weakened the patient very much, necessitating the employment of astringents. Cold injections, compresses, and acids were ordered; in this manner the bleeding was diminished, yet menstruation continued till the tenth day. *No membrane came away.* The loss of blood naturally weakened the patient considerably. She was in an anæmic condition, but recovered slowly. After another consultation, however, it was resolved to continue with the same treatment, as we desired especially to prevent the *formation of membranes*, and were led to suppose that the excessive menstrual flow could be regulated by itself or

by a modification of the treatment. After February 9th the introduction of kali chlor. was resumed, employing it, according to the reaction, daily or every two days. Its effect gave us this time more satisfaction. There was no considerable, even but a scanty, discharge. The patient improved greatly, the nervous symptoms were lessened, menstruation began on February 25th, only two days before the normal time, the flow being still copious but not profuse, only two or three blood coagula of the size of a pea; the bleeding did not increase till on the fourth day, and ceased on the ninth, without an intra-menstrual pause.

Of membranous separations only traces of very slender translucent fragments, two or three lines broad, could be discovered, which did not present the well-known structure of the decidua, and were recognized as flat translucent epithelial layers. There was no reason for discontinuing the present method of treatment. Immediately after the cessation of the menses we resumed the introduction of the kali chlor. every other day, with the same favorable result as in the previous month. The last applications were made daily, producing neither increased secretion nor pain. The menses appeared March 20th. In the first days there were but bloody spots; after the fourth day again a copious, but, in comparison to the last month, moderate flow; very small blood coagula; and complete cessation on the tenth day. The actual menstrual flow ceased on the seventh day. There were, however, in the last days two or three reddish-colored spots visible. During menstruation iod. of sod. was administered, and kali baths temporarily

continued. The patient improved rapidly, the general nervous symptoms were lessened ; during the last menstrual period nausea and diarrhœa supervened, probably in consequence of indigestion, the patient being also more excited and anxious on account of a possible hemorrhage. *No trace of a membranous exfoliation.* Still more encouraged by the results so far obtained, the kali chlor. was again applied April 1st, and repeated twice till the next menstrual period ; we had a very moderate uterine discharge following each application.

The menses appeared on April 15th again, *without a trace of membranes.* In the next two months the kali chlor. was applied but once—a few days before the menses were expected. The tampon, introduced as usual, immediately afterwards showed, after its removal, the above-described infiltration, and but few black-brownish traces of blood, followed by a moderate uterine discharge, lasting for twenty-four hours. These two periods appeared four days before the normal time ; the flow was copious, but not excessive ; its duration eight days ; no trace of any membranous discharge.

In order to ascertain whether the formation of a decidual membrane had really been prevented, it was resolved to discontinue the kali chlor. entirely during the next menopause. Menstruation took place on the twenty-eighth day, followed, however, *by the expulsion of several membranous pieces with the usual symptoms.* The patient went to Kissingen at the end of July, and consulted Prof. *Scanzoni*, who replaced the pessary removed before the examination, and, at her request, wrote the following lines :—

12. *Letter of Prof. Scanzoni.*

"Having examined Mrs. T. at the end of July, I find that she suffers from so-called dysmenorrhœa membranacea; she is in an anæmic condition, with symptoms of a disturbance of the circulation of the abdominal and pelvic vessels (plethora abdominalis). The uterus was moderately anteverted, its volume somewhat enlarged in consequence of a hyperplasia of its walls; at the orifice I observed a superficial egg-shaped catarrhal erosion. The patient remained only two days in Wuerzburg, and not at the time of menstruation, so that I have been unable to form an opinion of the membranes discharged with the menstrual flow, yet I do not at all doubt the correctness of the diagnosis heretofore made.

"I have never succeeded in obtaining a cure of the so-called dysmenorrhœa membranacea by means of medical treatment, and for this reason do not promise a favorable result in this case. A material advantage, however, might be attained by improving the condition of the blood, and by regulating the apparently disturbed circulation. For this purpose I also recommended the use of the waters of Kissingen, after which a 'cure de résins' of several weeks would be useful. During the winter I should advise the employment of iron, with mild laxatives, in addition to the symptomatic treatment of the painful dysmenorrhoidal symptoms.

"CASTLE ZIMELBERG, OBERBAYERN, August 11th, 1868."

The patient, following the advice, went to Kissingen, where she remained for two months. In the beginning she bore the treatment very well, the catamenia was regular, without a decidual discharge. The same happened the second month *with regard to the period and the decidual menstrualis*; the patient, however, was very much weakened from diarrhœa and hemorrhoidal bleeding, the nervous symptoms increased, and she returned to Vienna, where she soon recovered. Here the next menstruation took place, with the discharge of a decidual membrane.

Immediately after the cessation of the menses the kali chlor. was again introduced. The next menstruation occurred without a decidual discharge; the patient recovered, and soon left for Nice, still using the kali chlor. suppositories.

Dr. Rehberger informed us, December 14th, that the patient was unable to wear Meyer's pessary any longer, which he consequently removed; no membrane came away during menstruation. The patient afterwards informed us that at the appearance of the next menses a decidual membrane was again discharged, with all the concomitant symptoms.

We now close the report of the history of our case, remarking that we, perhaps, are justified in considering it an improvement; that the usually monthly membranous discharges appeared but twice during the ten months while we had charge of the case; we might also consider the kali chlor. an excellent palliative in this affection, as its local application to the uterine mucous membrane prevented the membranous formation, assisted, perhaps, by the improvement of the uterine dislocation.

This exquisite and instructive case induced its publication, and we shall now refer to the positive facts that were derived from it with regard to the knowledge of this disease.

In the works quoted in the beginning of this essay, four different views may be found:—

I. That *which denies the existence of a decidual affection of the uterine mucous membrane*, or reduces it to

an even monthly recurring abortus; caused by an early destruction of the germ or foetus.

The facts reported in our cause certainly refute this theory. The absolutely necessary condition for conception, cohabitation, has been excluded, beyond all doubt; during our course of treatment, the continued introduction of tampons, pessaries, etc., rendered cohabitation impossible; besides, the husband of the patient was absent. Yet we had decidual discharges in November and February, and extra-menstrual membranous exfoliations in January and February. After the decidual discharge had ceased four months, consequent to the application of medicines, we had again, in June, the characteristic expulsion of a fully developed membrane, which was absent, however, during the two months the patient sojourned with her husband, and reappeared during the subsequent abstinence.

The possibility of supposing an abortus lies very near, and consequently many tried to ascertain the true facts about it. Already *Denman* refers to this circumstance, saying: "As I have never observed this membrane in unmarried women, I began doubting whether it was not caused by a previous conception. But I have since obtained positive and undeniable proof that this membrane can originate without any previous cohabitation, and that the uterus of some women has the peculiarity of forming this membrane during or between the period. It seems to be necessary to establish the truth of this circumstance, as otherwise the appearance of this membrane may cause false and unjust opinions."

If the cases of decidual disease reported as having happened in girls do not exclude the above-mentioned suspicion, we quote, in proof of the assertion that decidual proliferations of the mucous membrane occur during menstruation even in virgins, the words of *Hyrtl*, who, in the tenth edition of his work on Descriptive Anatomy, page 746, says: "The formation of a decidua cannot be ascribed to a fecundation of the ovum alone; I found in the womb of two girls who died suddenly during menstruation, and one of whom possessed a perfect hymen, the uterine mucous membrane thickened, spongy, and enlarged, in fact resembling a beginning decidua."

The recognition of the decidual affection is also of importance in a forensic point of view.

It might be necessary to decide in court whether a particular case was one of decidua menstrualis or pregnancy. Such a case would offer many difficulties in its anatomo-histological relations. According to the present state of science there is almost no positive symptoms for differential diagnosis.

Although the decidua catamenialis is supposed to be less thick, more brittle, and of a more dirty-grayish color than the decidua gravis, this is not always the case, and, consequently, no proper symptom for differentiation. A decidua menstrualis can be assumed only when there is no trace of a chorion, reflex scrotina, amnion, or other foetal formations. The embryonic formations may, however, be absent, and yet a decidua gravis may be found. The cotyledons described by *Montgomery* as characteristic for the decidua gravis, are a

positive sign for the decidua grávida; their absence, however, does not always exclude the possibility of a Hunterian membrane. Under such circumstance the physician could only be guided by an exact *Ernirung*, elucidation, and a critical view of the case.

It cannot be supposed that, morbid causes being present, only a single menstrual exfoliation of the mucous membrane would take place; in most cases probably a membrane or membranous pieces are discharged nearly every month, and either the women recollect that such discharges have frequently taken place, or they can be soon expected, in spite of total abstinence from cohabitation.

II. That theory which supposes the cause of this disease to be a *considerable congestion to the ovaries or uterus*, or a great disturbance of the venous circulation as an essential condition.

Thus already *Siebold* places dysmenorrhœa membranacea among the so-called plethora abdominalis, and in most of the new works on gynecology decidual disease of the uterine mucous membrane is described with the congestive dysmenorrhœas, these being found frequently in a congestive state, hemorrhoidal dilatations and hemorrhages, with this disease. These congestive symptoms seem, however, to be sequelæ of the dislocations so frequently accompanying the dysmenorrhœal membrane.

It is known that versions always cause venous congestion and stasis, and it seems that a protracted duration of this disease produces uterine dislocations. Thus *Oldham* observed retroversion of the uterus with such

a congestion of the ovarium that, at the menstrual period, the organ could be felt through the abdominal walls, and he believes to have found in retroversion of the uterus a symptom of differentiation from the first weeks of pregnancy.

In our case there was a strongly anteverted uterus, neither could the ovaries be felt through the very thin abdominal walls; we also found in another case anteversion without swelling of the ovaries.

This proves that dysmenorrhœa membranacea may exist with either antro- or retroversion, as well as with or without ovarian tumefaction.

III. That theory which, according to *Simson*, believes the process going on in decidual disease of the uterine mucous membrane to be *physiological*, assuming only a *hyperplastic action of the normal functions*; for this reason, because at every menstruation the epithelium of the inner uterine surface is undoubtedly separated, forming a part of the menstrual blood. On this account the great membranous epithelial proliferations were explained by an increase of the physiological uterine functions, which explanation seems to be the more justified as these membranous exfoliations usually occur during the catamenial period.

In order to prevent a misconstruction of the expression physiological process, we may remark that on one side processes occurring in an *unusual manner* and under *unusual circumstances* cannot be well designated as purely *physiological*; on the other side, no satisfactory explanation can be given for the symptoms accompanying dysmenorrhœa membranacea by the designation

of an intensified physiological process, or by the simple increase of vitality recurring monthly in the reproductive sphere of the female genitals.

According to our opinion there must be important anomalies of nutrition in order to cause the sterility, the important consecutive disturbance of local and general nutrition, and the monthly expulsion of the thickened epithelial lining of the uterine mucous membrane and utricular glands.

We therefore incline to the

IV. theory, that *inflammation is the cause of the membranous proliferation*. Although *Andral's* idea does not seem to be without all reason, to omit the word inflammation altogether from the medical nomenclature, as it is often arbitrarily used, we are not yet able to substitute another more suitable expression for certain disturbances of nutrition. In the sense of those pathologists believing inflammation to be exudation with puriform and other changes, no starting-point can be found for this process. But if in gynecology only those processes having the above described results were to be called inflammation, the whole theory of chronic inflammation and infarct of the uterus had to be given up. At the present time, however, the term inflammation is applied to those diseases of the uterus in which are found changes in the structure of the organ, thickening, hypertrophy, increase in the supply of blood, etc. In this sense of the term the menstrual decidual disease is especially of a chronic inflammatory character on account of the thickening proliferation, etc. Although *Rhuisch*, *Denman*, and

Montgomery recognized the similarity of the decidua gravior and menstrualis, yet they assumed an inflammatory cause, the decidua menstrualis being, however, till *Simon*, confounded with crupous and other pseudo-membranous products. These membranes, however, consist, as has been explained sufficiently, only of the epithelial covering of the uterine mucous membrane, and *Theitz* defines them most characteristically, in his letter No. 6, with the words: "*They are pieces consisting of the epithelial covering of the inner uterine mucous membrane and their granular prolongations. Permanent elements or pieces of pathological growths of tissue have not been found in the presented specimens.*" We add to the well-known menstrual exfoliations of the uterine mucous membrane the extra-menstrual epithelial separations, observed by us and examined by Dr. *Rokitansky*, of which no record is to be found in the medical literature, they being exactly of the same structure as the menstrual formations. They could not be derived from former menstrual periods, as we found membranes previous and subsequent to that catamenial discharge.

According to our opinion, and according to the present state of medical science, a sufficient explanation of these symptoms and products can only be found in an inflammatory process. Both *anatomical and clinical facts agree with this view.*

If we do not take into consideration those cases in which this disease has been observed accompanied by chronic metritis, induration and ulceration of the neck to which the former could possibly have been accessory, a mucous membrane in a state of menstrual prolifera-

tion cannot be distinguished from one of an inflammatory origin. The more or less tumefied, hyperæmic surface, the strong vascular injection around the single glands, the more profuse secretion of the latter, separation of epithelium, and an easily bleeding surface streaked by small extravasations of blood, are characteristic for both the menstrual and inflammatory swelling of the mucous membrane. Even if the menstrual process is not identical with the inflammatory, yet we must find in the decidual disease of the uterine mucous membrane the tumefaction analogous to inflammation certainly in a still higher degree. Such is the anatomical observation in post-mortem examinations in which the mucous membrane during menstruation was in a state of decidual proliferation, and the extra-menstrual growths can only be based upon the same anatomical facts.

Under such circumstances the usual, although increased menstrual congestion, does not suffice as an explanation, neither could a sufficient cause be found in the monthly ovulation for the extra-menstrual decidual membranes. The menstrual congestion can only increase the already present proliferous cell-formation; the latter, by compressing the capillary system, may render difficult the return of the blood; and if the bleeding is once established, the already formed membrane becomes a foreign body, and is expelled by means of uterine contractions.

The large epithelial proliferations show plainly an affection of the utricular glands. The longer the disease lasts the larger and broader are the sequestered epithelial ducts, thus proving the enlargement of the

utricular glands. (These prolongations resemble at the first view strongly the villi of the chorion.) In a lesser degree of this disease only loosely connected epithelial layers are discharged without any such prolongations. An inflammatory disease of the utricular glands usually affects only a small space, when but small-sized pieces come away; but the same disease may extend *over the whole series of utricular glands, i. e.,* of the uterine mucous membrane, and thus cause an exfoliation of the *entire uterine epithelium*.

Such a process naturally recurs at different times, and to a different extent, and the oftener it occurs the more marked become the disturbances of circulation, extending more and more over the parenchyma until they finally are complicated, according to the extent of the disease, with partial or general chronic metritis and its consequences.

The clinical facts especially speak for an inflammatory state, of which we cite the following: the frequently developing parenchymatous alteration of tissue in consequence of long lasting chronic metritis and endometritis, and consecutive version of the uterus, the perceptible enlargement of the uterus, with considerable painfulness, and the consecutive general symptoms of irritation and disturbance of nutrition.

If we, therefore, suppose that ovulation as such and increased menstrual congestion is insufficient for explaining the whole series of symptoms of this disease, and that the epithelial proliferations indicate the prominent seat of the disease, we might be induced to interpret the words of *Klob*, who says, "That those pathologists are not much mistaken who, in such cases,

speak of an endometritis" in such a manner that indeed a chronic endometritis, or rather, to speak more correctly, an inflammation of the utricular glands ramifying so deeply in the uterine tissue, or at least an inflammation of the matria, may be the cause of such membranous proliferations. If the denomination "*decidua menstrualis*" is proper for this membrane as such, the name *dysmenorrhœa membranacea* corresponds to the painful menstruation with membranous exfoliations, we might characterize our view not inaptly with the designation "*endometritis epithelialis*."

This form of fragmentary separation of epithelium is not found solitary, for we also meet with the same process in the vagina. Thus *Tyler Smith*, in his work on *Leucorrhœa*, directs attention to this kind of epithelial exfoliation, and in our patient, too, epithelial masses, connected in large shreds, were repeatedly discharged from the vagina, which, after having been placed in water, were recognized as flat translucent epithelial layers. *Dr. Scheithauer* had also examined several epithelial lumps, of the size of a hazel-nut, discharged from the vagina of another patient, which were found to be nothing but vaginal pavement epithelium. Several authors have lately pronounced in favor of inflammation: see *Hewit* in his work on *Diseases of Women*, 1869, pages 55 and 332.

If we now consider briefly what has been said about this disease, we come to the following conclusions:—

1. *Dysmenorrhœa membranacea, decidua menstrualis, endometritis epithelialis* is to be considered an important disease (*morbus sui generis*).

2. The *pathognomonic character* of the disease is the *discharge of a formation resembling Hunter's membrane during, and, at the latest, forty-eight hours after menstruation takes place.*

3. Under certain circumstances extra-menstrual membranes of the same structure are discharged.

4. These membranes are of different size and formation, and in typical cases their *configuration resembles the lining of the womb.*

5. These membranes consist *only of epithelium of the uterine mucous membrane and the prolonged and torn out utricular glands*, which at first sight resemble closely the villi of the chorion.

6. Both *menstrual and extra-menstrual epithelial membranes* are developed *during the menopause in consequence of a chronic inflammation.*

7. This disease produces, after a longer duration, *retro- and anteversion*, congestion, and disturbances of circulation of the uterus, and finally considerable disturbances of the system in general.

8. *Sterility* is found in all women suffering from this affection.

9. The *etiology* is entirely unknown; this, as well as the *pathology* and treatment, require farther researches in a pathogenetic and clinical point of view.

10. The kali chlor., applied directly to the uterine mucous membrane, seems to exercise a palliative interference with the formation of the membranes.

11. A cure of the general affection can only be effected by the removal of the local symptoms.

CORRESPONDENCE.

BY A. JACOBI, M.D.

(Continued from page 522, Vol. II.)

DR. J. LEDEBER (Vienna): *Observations on the hereditary diseases of infancy.*—From a practical point of view, they are: 1st, hereditary affections of the system; 2d, of single organs. The first class (syphilis, rachitis, scrofula, tuberculosis) are more easily noticed by the parents than the second, as they are more frequent and more dangerous. Their transmission from the mother is explained by intra- or extra-uterine nutrition; from the father by the semen, or by a similarity in the constituents or disposition of the blood. Thus a syphilitic father may have a syphilitic child without the mother being syphilitic, and robust and healthy parents may have scrofulous or rachitic children, provided one of them was scrofulous or rachitic when young. Of the diseases mentioned above, syphilis is the rarest, because it is mostly transmitted from the father, and even the poor will try to get cured of their syphilis. The diseased infants will frequently perish, because of the danger to wet-nurses employed. Internal tuberculosis is not frequent; external caseous deposits very frequent. Rachitis is a frequent occurrence, resulting from rachitis, scrofula, and tuberculosis or old age in the parent. If there is scrofula or tuberculosis in the parent, there may be scrofula in one, tuberculosis in the other child. Scrofula and rachitis rarely in the same child. Scrofula is more frequent than any other affection, seldom in all of the children; not unfrequently the oldest in a family are affected. Has seen no scrofula depending on syphilis of the parent. Syphilis appears earlier than any other, especially on skin and intestinal mucous membrane. Rachitis in the cranial bones is also observed in early infancy; scrofula is apt to yield early deposits in the skin, like syphilis; tubercular granulations in the brain are rarely observed before the end of the first year.

Symptoms of chlorosis are seen long before the time of puberty in the daughters of formerly chlorotic mothers. Of the neuroses, spasmus glottidis may be considered as indirectly hereditary because of its rachitical origin; nervous irritability is transmitted from hysteria. The second class contains inflammation and hypertrophy of the tonsils. Pneumonia and bronchitis are frequent in children of tuberculous parents. Chronic catarrh and atony of the intestinal tract are eminently hereditary. The transmission of faculties of the mind, of singing, etc., is explained by a similar structure of the brain, the larynx, etc. The likeness of external organs in parents and children is often remarkable. Anomalies are frequently transmitted, thus macrocephalus and strabismus. Thus internal organs of the child are similar to those of the parents.

Noller mentions arthritis deformans amongst the hereditary diseases; *Seydewitz* (London) some affections of the eye. *Ebert* asserts the identity of scrofula and tuberculosis; *Steffe*r and *Flesch* protest against such identity. *Jacobi* and *Hoppe* try to prove that syphilis in the parents will not always appear in the child as syphilis, but in one of the other forms of grave disorders of nutrition.

Schuller (Vienna): *On local treatment of diphtheria*.—Diphtheria and Croup ought to be considered as affections with marked *clinical* differences. Rejects the application of nitrate of silver in diphtheria, both of the pharynx and the eyelids. Has frequently found that a diphtheritic deposit disappears later when cauterized with nitrate of silver than when not interfered with, and that neither the reproduction nor the spreading of the deposit is prevented by the solid stick. Applications of concentrated liquor sesquichloridi ferri exhibit no better results. Many authors consider such applications as directly injurious. Recommends strict cleanliness and tinct. opii.

All the members present coincide with the above views; *Cohen*, *Ebert*, *Stiebel*, recommend ice and solutions of chlorate of potassa

as local remedies; *Rinecker* alcohol, chloracetic acid, and hypermanganate of potassa; *Baumler* (London), carbolic acid.

Prof. *Rinecker*: *On encephalitis congenita interstitialis*.—This affection, which has been described first by Virchow, has been found by R. in all infants who died of marasmus in the first six weeks of life, although brain symptoms were absent. The disease appears to be related to physiological processes. May be that experiments made on starving young animals would yield instructive results.

(To be continued.)

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

REPORTED BY GEORGE PEPPER, M.D., SECRETARY.

MEETING OF OCTOBER 7TH, 1869. DR. F. G. SMITH, PRESIDENT, IN THE CHAIR.

CASE OF DIFFICULT LABOR.

DR. G. PEPPER related the history of a case of difficult labor as follows: Mrs. B—, æt. 35, of a strumous diathesis, was subject as a young girl to frequent attacks of chronic diarrhoea; had disease of bones of left leg, and a number of chronic glandular abscesses; married about eighteen months ago, and miscarried a few months afterwards, but conceived again before menstruation had become regularly established. Dr. P. was engaged to attend her in her confinement, which was expected about the middle of July, 1869. That period having passed without any symptoms of approaching labor, she was examined per vaginam, and the following condition found to exist: The uterus was enlarged to about the size of an eighth month pregnancy; the cervix not obliterated, but extensively softened; the uterus apparently held its normal relation in the abdominal cavity, but the plane of the superior strait of the pelvis made such an acute angle with the spinal column that the os uteri rested above the pubic symphysis. The capacity of the pelvis rather below the normal, but not sufficiently so to warrant the induction of

premature labor. She progressed favorably on the whole (though she at times suffered from marked symptoms of pressure, as œdema of feet and legs, hemorrhoids, &c.), and fell in labor Sep. 27, 1869. The first pains were feeble and irregular, and for some hours seemed to distress her but little; but as they increased in intensity she became almost maniacal, screaming and throwing herself about in the wildest manner. She began to vomit almost constantly, and had a number of watery stools. On vaginal examination, the os uteri was found dilated to about one inch in diameter, and soft and dilatable; it still was very high up, and directly above the symphysis pubis, so that at first it was exceedingly difficult to detect it. The foetus was alive and active, and presented in the left occipito anterior position of the vertex. The membrane ruptured early in the first stage, and the liquor amnii dribbled away slowly. The above condition lasted for about sixty hours, no change having been effected in the dilatation or in the position of the presenting portion of the child. The vagina had become hot, though not dry; the external genitals were tender and swollen. She was still excessively restless, vomiting almost constantly; pulse about 140 per minute, and feeble; belly swollen, and on the left side exquisitely sensitive. It was deemed necessary to interfere, and she was thoroughly ætherized. The os was gradually dilated by the Barnes dilator, only the largest size being needed; and as soon as it had reached its greatest possible distention it was removed, and the Hodge long forceps applied. The application of the anterior blade was very difficult, and it was found impossible to grasp the sides of the head as accurately as desired. After the blades were in position, intermittent compression and traction was made for $1\frac{1}{2}$ hour, when she was delivered of a full sized male child, perfectly relaxed, and evidently dead for some hours. She reacted well from the ether, the placenta was readily removed, and a most careful examination failed to show any injury from the prolonged compression of the tissues. She had some ergot given her, was drawn up in bed, and a binder applied. The pulse was about 120, and rather feeble. She was ordered beef essence, milk-punch every three hours, and hot poultices to abdomen. For the three following days she was as ill as possible; pulse 140 to 165—very quick and feeble; face pale; expression anxious; tongue coated and dry; belly very tender, and tympanitic; urine retained; lochia scanty, and no attempt at lacteal secretion. From this date she has slowly improved until the present time. The urine still has to be drawn off three times daily; the lochia have been offensive and scanty, the belly constantly very tender and swollen, the pulse always over 130 per minute, and the

skin intensely hot, and at times sweating. She has taken iron and quinia and morphia in very large doses; has been kept on the beef-tea and milk-punch; has had constant application of hot poultices to the abdomen and disinfectant vaginal washes. The urethra had been so stretched by the position the uterus held that at first it was necessary to use a long flexible catheter.

DR. PEPPER spoke of somewhat similar cases related by various authorities, and believed that the condition coincided with that called "posterior obliquity of the uterus." He thought that the unusual inclination of the pelvis probably depended on the disease of the osseous system during childhood and youth. The position of the os uteri so directly above the pubic arch was entirely new to him. The finger had to be curved around the symphysis before it could be reached, and it was so high up that it was only by introducing the hand into the vagina that an accurate examination could be made. The os uteri was drawn into the centre of the superior strait a number of times, but always returned to its original position. No postural treatment seemed to have any beneficial effect.

DRS. A. H. SMITH and GOODELL remarked that they were rather inclined to question Dr. Pepper's explanation, though, as neither of them had had an opportunity for examining the patient, no definite ground could be taken.

RETARDED PHYSICAL DEVELOPMENT.

DR. F. G. SMITH related the case of a young girl who had reached the age of twenty years without any further physical development than usually belongs to a child of ten or eleven years of age. The intellect, however, was mature and unusually good. The mammary glands were rudimentary; no hair on pubis or axilla; the form was angular; there were no sexual sensations, and menstruation had never appeared. On examination, the external genitalia resembled those of a child, but were perfectly formed. On exploring the parts, a small conical papilla was found projecting into the superior segment of the vagina, but a careful rectal and vesical examination failed to reveal any trace of either uterus or ovaries. The mother, a very intelligent person, and the patient herself, both assured Dr. S. that small seeds of fruit frequently passed in the urine, and that on standing it occasionally deposited a greenish, flocculent sediment, possibly faecal matter. There was, however, no escape of urine by the bowels, and even on the most careful examination no orifice could be detected.

RETENTION OF PIECES OF MEMBRANES AND PLACENTA.

DR. WM. GOODELL stated that he had seen several cases where, even after the most careful manipulations, small portions of the membranes had been torn from the placenta and remained in the cavity of the uterus. The woman had generally severe after-pains, offensive and rather profuse lochia, and slight hectic irritation. In one case, seen very recently, the child's head was expelled entirely by one violent uterine contraction, the body being only prevented from being extruded by the cord, which was around the neck. After its delivery, the placenta was found inverted in the lower segment of the uterus and entirely separated from the membranes. Great difficulty was experienced in removing them entire. He asked the experience of the Society in regard to the propriety of continuing efforts at extraction of portions of the membranes after all hemorrhage had ceased and the uterus contracted firmly.

DR. A. H. SMITH related the history of a case where, during delivery, the membranes had been torn off at their placental attachment, and he was able, by rolling the protruding portion in a cloth, to secure the expulsion of the entire mass. Dr. S. said that he always introduced the hand into the vagina and two fingers into the os uteri immediately after the extraction of the placenta, and believed that by thus removing clots, portions of membrane, &c., a most important step was taken towards preventing hemorrhage, violent after-pains, and septic conditions.

SUDDEN DEATH FOLLOWING ABORTION.

DR. R. A. CLEEMANN related the history of a case where abortion had been followed by death in a few hours. The woman was apparently healthy before the accident, lost but a very moderate amount of blood, and developed no symptoms other than those of extreme prostration and death from syncope. No post-mortem examination was allowed. Several members commented on the cause of the sudden death, and related somewhat similar cases.

NEW UTERINE DRESSING FORCEPS.

DR. G. PEPPER exhibited to the Society a pair of long uterine dressing forceps, which allowed of the removal of the blades and the adaptation of a pair of curved blades for carrying various therapeutic agents into the cavity of the uterus. The sound also separated, and the entire number of pieces readily slipped into the bivalve speculum, thus enabling them to be carried in the vest pocket.

MEETING NOVEMBER 4TH, 1869. DR. A. H. SMITH IN THE CHAIR.

GALVANIC BOUGIE.

DR. WM. GOODELL showed the Society a galvanic bougie, composed of two metals, and so arranged that when the handles were approximated a galvanic current was established. The instrument had been used by an empiric to produce abortion, and on his trial for the crime it had fallen into the hands of one of the court functionaries, who had given it to Dr. Goodell. Dr. G. asked if an instrument of similar construction would not be of advantage in the treatment of certain diseases of the uterus and vagina.

DR. G. PEPPER related the sequel of the case of Mrs. B., detailed at last meeting, and stated that two large pelvic abscesses had formed and discharged through the vagina, and that the patient was now convalescent. The uterus still held a position far anterior to the normal one, and was high up in the pelvic cavity.

DIET OF PUERPERAL WOMEN.

DR. ROBERT P. HARRIS read a paper on "Milk as a Diet During Lactation." (Printed in full in this number of the *AMERICAN JOURNAL OF OBSTETRICS*.)

DR. GOODELL spoke of the diet of the puerperal women at the Preston Retreat, and stated that though they were not put on a milk diet, yet the dietary was very full, and that milk entered largely into it. As a rule, the women nursed their own children, and usually had an abundant supply of nutritious milk. He also alluded to the positive effects of tea and coffee, and stated that the former had seemed to him to act as a positive stimulant to the secretion.

PHYSIOLOGICAL ACTION OF TEA, COFFEE, AND MALT LIQUORS.

DR. JAS. TESSON made a few remarks upon the physiological action of tea, and stated that it was usually ranked with coffee as an arrester of tissue metamorphosis, and really supplied nothing to the blood.

DR. A. H. SMITH spoke of the positive effects of coffee as an antigalactic, and he believed that unless the mother had a superabundant secretion of milk, it should always be forbidden to nursing women.

DR. G. PEPPER stated that green tea was considered by several high authorities as a positive stimulant to uterine contractions, and asked if it might not be considered a general stimulant of the

female genital system, and its action on the mammæ merely a part of this exalted vitality.

DR. JAS. TESSON spoke of the effects of the malt liquors, and asked whether they caused merely an increase of the watery elements of the milk or a positive increase in the solid, nutritious constituents.

DR. G. PEPPER answered him, and alluded to the "swill milk" excitement in New York several years ago, and stated that, if he remembered rightly, although the total amount of milk was greater, yet it was of a much poorer quality, though this could scarcely be considered an argument, as the food the wretched animals received was of such a character as to preclude the possibility of a good rich secretion of milk.

DRS. HARRIS and A. H. SMITH referred to the same thing, and stated that it was the custom, in most large milk dairies near great cities, to feed a certain amount of malt to the cattle, and that the milk was decidedly increased in amount and generally of a good quality.

DEATH OF A NEW-BORN CHILD FROM HEPATIC HEMORRHAGE.

DR. W. B. PAGE related the history of a case of sudden death in an apparently healthy infant, sixty hours after birth. The child had seemed strong and well. It was suddenly noticed to become pale, and the abdomen became swollen and tense. It died in a few minutes from syncope. On post-mortem examination the abdominal cavity was found to contain a large amount of clotted and fluid blood, which had escaped from a laceration of peritoneal covering of the liver over the anterior edge of the right lobe. The peritonæum was separated for some distance around the point of rupture, and no solution of continuity of the hepatic tissue or open vessel could be detected.

DR. GOODELL remarked that in certain rare cases the umbilical vein, instead of passing directly into the transverse fissure of the liver and then dividing, sent off several branches before reaching that position, and it occurred to him that the case in question might have been one of a similar kind, and that, from some temporary distention of the abdomen or sudden change in position, one of these small vessels had been torn as it penetrated the hepatic capsule.

DR. G. PEPPER alluded to the fact that vascular tumors had been found under the capsule of the liver in adult subjects, and thought that possibly some such condition might have existed in the present case, and the relaxed vessels surrounded by blood been readily mistaken for a clot. As the specimen had not been

kept for careful examination, these remarks must be merely of the nature of hypotheses, and incapable of throwing any light on a very obscure point.

DR. W. B. PAGE stated that the mother had just come from an extremely malarious region, and that though she had had no marked chill, yet, in absence of some positive proof of decided lesion, he had considered it possibly due to the intense congestion of the liver accompanying the algid stage of a paroxysm.

FATTY DEPOSITS IN THE ABDOMINAL WALLS AND OMENTUM AS A CAUSE OF ERROR IN DIAGNOSIS.

DR. G. PEPPER read a paper on the above subject. (Printed in full in this number of the *AMERICAN JOURNAL OF OBSTETRICS*.)

DR. GOODELL related the history of a case confirmatory of the views expressed, where a woman, after a very profuse hemorrhage from the presence of an hydatid mole, grew stout, and had her abdomen greatly enlarged from fatty deposits. He also alluded to observations on the lower animals, as where well-fed bitches, after being unsuccessfully lined by the dog, enlarge, suppose themselves with young, and, at the approach of the time corresponding with the normal termination of gestation, seek out obscure corners and yelp in a manner indicative of approaching labor. Dr. G. also spoke of the normal tendency of women to become fat, and alluded to the well-known fact that, in the ancient rites, where incremation was practised, it was found necessary to mingle the bodies of both male and female, as the male bodies alone could not be thoroughly destroyed.

II.

REVIEW OF LITERATURE PERTAINING TO

PREGNANCY, LABOR, AND THE PUERPERAL STATE.

I.

The Induction of Premature Delivery as a Prophylactic Resource in Midwifery. By T. GAILLARD THOMAS, M.D., Professor of Obstetrics and the Diseases of Women and Children, in the College of Physicians and Surgeons, New York. (*New York Med. Journal*, Feb., 1870.)

THERE are certain dangers inherent to the process of partu-

rition which, in spite of scientific midwifery and the prophylactic resources of intelligent hygienic management, must forever invest it with importance, and produce a certain loss of life in its performance. The most sanguine of modern obstetricians must admit that the perils of childbirth, which have been recognized in all ages and among all people, will never disappear, but must forever endure as a fulfilment of the primal curse, "In sorrow shalt thou bring forth children."

He may turn with pride to the advances in pathology and improvements in practice which have marked the modern school of obstetrics; he may enumerate with warrantable gratification the surgical procedures that now render manageable abnormal labors with which our forefathers could not cope; he may point to a marked improvement in the statistics of the lying-in chamber, yet still he must feel and admit that much—very much—remains to be done. When he reflects upon the statement made by one of the most eminent living obstetricians, that in England and Wales, which contain but twenty million people, three thousand women die annually in childbirth, he must acknowledge that it is the duty of every obstetrician to study with the utmost devotion those influences which, exerting themselves before, during, and after delivery, accomplish this unfortunate result.

As I have just now stated, a certain number of these influences are unavoidable, being either inherent to the process of parturition, or developing themselves without warning in the moment of its performance. But while in some unfortunate cases no premonitory symptoms will occur to forewarn the most watchful and intelligent practitioner of the danger which awaits the parturient act, I do not think that I assume a position which is untenable when I state that, in most instances, the most serious complications of labor, both as regards mother and child, may be recognized by their peculiar premonitory signs, one, two, or even three months before the end of pregnancy, and, being recognized, may fortunately often be avoided. My impression is, that nothing will in the future tend to diminish the mortality attendant upon parturition so markedly as the induction of premature delivery for the removal of mother, child, or both, from that condition upon the continuance of which depends the danger which menaces them.

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The practice of inducing premature labor, unlike that of abortion, is of very recent date. Denman informs us that in the year 1756 a congress of physicians was held in London for the purpose of discussing the advantages of the procedure. It

was approved of, and since that time its adoption has steadily though slowly extended.

The following list presents the morbid states for which I should consider the operation indicated :

1. Deformity of the pelvis.
2. Placenta prævia.
3. Aggravated uræmia.
4. Excessive vomiting.
5. Placental apnœa.
6. Commencing epithelioma.
7. Death of child and consequent septicæmia.
8. Threatened death of child.
9. Approaching death of mother.
10. Amniotic dropsy.
11. Previous rupture of uterus or performance of the cæsarean section.
12. Excessive accidental hemorrhage.
13. Previous difficulty in deliveries of large children, or of children with ossified sutures.
14. Tumors obstructing the pelvis.

From this enumeration of indications for the induction of premature delivery, I have intentionally excluded a number which call for abortion, but not for the procedure which now engages our attention. I have likewise, for the purpose of avoiding prolixity and a spurious show of completeness, omitted the enumeration of certain rare conditions which might call for it, but would in all probability never do so. As examples of such indications let me mention the existence of ovarian and fibroid or fibro-cystic tumors in the abdomen; the differentiation of an extra-uterine pregnancy from a tumor, etc., etc. The ground left untouched in the list given may be covered by two general statements: first, any condition threatening the life of mother or child after the period of viability, which could be removed by premature delivery, would call for its induction; second, any obstruction existing in the true pelvis which would allow the passage of a child that has not arrived at the full period of intra-uterine life, and would prevent the exit of one which has reached the end of the ninth month, without mutilation, would prove a valid indication.

I shall now consider each condition which I have enumerated, in turn, giving clinical cases as instances of a resort to the operation for such indications as appear to require illustration from their novelty or the doubtfulness of their claims.

Deformity of the Pelvis.—Premature delivery has been more

frequently induced on account of this condition than any other which has been mentioned. That this should be so is a natural deduction, when it is borne in mind that in the great majority of instances it is the indication which calls for those dangerous procedures—craniotomy, embryotomy, and the cæsarean section. Out of 300 instances in which premature delivery was resorted to in British practice, according to Dr. Tyler Smith, in an able essay in the first volume of the London Obstetrical Transactions, 273 operations were necessitated by pelvic distortion. 273 out of 300 presents a most disproportionate ratio, but the hearer must remember that these are the statistics of a past age. Every progressive obstetrician of to-day will bear me out in the assertion that many indications which until lately have not claimed the advantages of this operation will now do so, and make the disproportion in favor of deformity of the pelvis much less marked.

It is difficult to say what degree of deformity calls for the procedure; but in general terms it may be stated that, wherever it is estimated, or, as is far better, where it is proved that a child at full term cannot be delivered except by instrumental or manual means, premature delivery is called for. Still speaking generally, the normal length of the shortest diameter of the pelvis is 4 inches; between this and 3 inches is the domain of the forceps; between 3 inches and $2\frac{1}{2}$, that of version; between $2\frac{1}{2}$ and 2, that of craniotomy; and under 2 inches, that of the cæsarean section. I shall not argue as to the propriety of preferring premature delivery to the terrible risks attendant upon the graver of these procedures, for all will admit it. I take a position which will be less freely acknowledged when I state that so safe is the premature and artificial delivery of a child at the eighth or eighth and a half month of utero-gestation, by our present methods, that it should be preferred to delivery by the forceps at the tenth menstrual epoch. But under the last circumstances the necessity for interference must be established, not by measurements, which do not display slight contraction; it must have been proved by past experience with the particular patient whose case engages attention.

For such a condition as that which I have depicted I have twice induced premature delivery. One of these cases will suffice as illustrative of my proposition:

I was requested in the month of March last, by Dr. Wm. B. Bibbins, to see with him Mrs. McD., an Irish woman, aged thirty six years, who had been married seven years and borne four children. She gave the following history of her labors. The first child, a small girl, was delivered at full term by the forceps, by Dr. Ramsey. She was in labor, she says, four

days. This child lived for one year. The second child was a larger girl, which was delivered by forceps, and was still-born. The third was delivered by version, by Dr. Gillette, and was still-born. The fourth was delivered by myself in consultation with Dr. Bibbins, by version, and was still-born. She was now pregnant for the fifth time, and was extremely solicitous for a living child. With Dr. Bibbins's consent, I promised her that delivery should be brought on in three weeks from date, when she would be at the end of the eighth month of pregnancy. A careful examination of the pelvis convinced me that it was a *justo minor* pelvis, but one not relatively deformed.

On the appointed day Dr. Bibbins, Mr. Hall, a student of Dr. B., and myself, met at the house of the patient, and proceeded to bring on delivery in the following manner: we placed the patient in the obstetric position, with a tub of warm water under the edge of the bed, and for half an hour showered the os freely. At the end of that time I put in Barnes' smallest dilator, and in an hour the os was fully dilated, and the bag of membranes presenting; no labor pains came on, and in twenty-four hours we met again, and I used the warm douche for a half hour, dilated the os fully with the largest dilator, and introduced a No. 6 gum-elastic catheter between the membranes and the uterus, up to the fundus. In twenty-four hours we met again, and, to my surprise, found that no uterine contraction had occurred. The catheter was now removed and inserted upon the other side, an enema of salt water was thrown into the rectum, and the largest dilator again introduced. We waited over an hour, and still there was no uterine effort. Slight hemorrhage from the uterus now occurred upon removal of the dilator, and fearing for the child I proposed at once to deliver it. Dr. Bibbins consenting, the patient was anesthetized, and, passing the hand into the vagina, and two fingers into the uterus, I readily delivered a vigorous boy, who has since done well, as has also his mother. I have met with but one other case—one, by the way, which was coincident as to time with this one, in which it was so difficult to excite uterine contractions.

Placenta Prævia.—No one who has had experience with this form of complicated labor, will feel disposed to undervalue or cast aside any remedy which is offered for the rescue of patients presenting its premonitory symptoms. So serious are its results that, although it occurs not oftener than once in five hundred cases, which is the proportion computed as correct by some authors, it exerts a marked influence upon the statistics of obstetrics. According to the calculation of Sir James Simpson, based upon the analysis of three hundred and ninety-nine cases, one-third of the mothers and over one-half of the children are supposed to have been lost. The reasons for this great mortality are probably the following:

1. The dilatation of the cervix for the passage of the child unavoidably exposes both mother and infant to great danger from placental detachment and hemorrhage.

2. Repeated hemorrhages occurring during the ninth month; as the os internum dilates under the influence of painless uterine

contractions, which then occur, the woman at the time of labor is usually exsanguinated, exhausted, and depressed both physically and mentally.

3. Profuse flooding generally occurring with the commencement of labor, the medical attendant is often not at hand, and reaches his patient only after a serious loss of blood has occurred.

Fortunately, this condition is usually announced during the last months of utero-gestation by premonitory signs of reliable character, and thus we may empty the uterus before the vital forces of both mother and child are exhausted by hemorrhages, the results of repeated detachments of the placenta. My conviction is that, in every case of declared placenta prævia, premature delivery should be induced. What objections can be urged against it, other than that a child of less than nine months of intra-uterine life does not have as good a prospect of life as one which has arrived at full term? In the case which we are considering, even this falls to the ground, for an eight-months child out of the uterus, and depending upon pulmonary respiration, has a brighter prospect for life than one in that cavity depending for aëration of its blood upon a crippled and bleeding placenta. For the mother, how incomparably greater the safety which attends an emptied and contracted uterus! By inducing delivery during the ninth month of pregnancy, we should be dealing with a woman who is not exhausted by repeated hemorrhages; we would be in attendance at the moment of cervical dilatation, and consequently the moment of danger; and we would be able by hydrostatic pressure to control hemorrhage in great degree, while at the same time dilatation of the cervix, which constitutes the period of maximum danger, may be rapidly accomplished.

With these considerations before me, and with a certain amount of experience to support them, I cannot resist the conviction that, when premature delivery becomes the recognized and universal practice for placenta prævia, the statistics of Dr. Simpson will be replaced by others of a far more satisfactory kind.

I have induced premature delivery for placenta prævia four times; and, as the subject appears to me of paramount importance, I risk the danger of wearying my audience by detailing all of the cases. (Space allows us to insert but one.—EDS.)

CASE I.—Mrs. W., aged twenty-six, primipara, in good health, was suddenly taken with hemorrhage three weeks before full term. She sent for me in great haste, but, being occupied, I was unable to go to her, and she was seen for me by my friend Dr. Reynolds. He discovered that she had

lost a few ounces of blood, but that the flow had ceased. Three days afterward she was again affected in the same way, the flow ceasing spontaneously. About a week after this, she was taken during the night with a flow, which was so profuse as to result in partial syncope when she endeavored to walk across the room. I saw her early the next morning, found her flowing slightly, and, upon vaginal examination, succeeded in touching the edge of the placenta through the os, which was dilated to the size of a ten-cent piece. Later in the day, Drs. Metcalfe and Reynolds saw her and agreed in the propriety of premature delivery. In accordance with this consultation, at 7 P.M. I introduced into the cervix, with considerable difficulty, and by the employment of some force, the smallest of Barnes's dilators. This in twenty minutes was followed by the next larger dilator, and in an hour by the largest. Dilatation was rapidly accomplished, but, instead of removing the largest bag, I left it in the cervix until 10 o'clock that night. Expulsive pains coming on at that time, I removed it, when the head rapidly engaged, and before morning Mrs. W. was safely delivered of a living girl. The placenta followed rapidly, and both mother and child did well.

In this case, although hemorrhage continued slightly throughout the labor, it was never sufficiently profuse to endanger the lives of either mother or child. The implantation of the placenta being lateral, diminution of the flow occurred as the head advanced and made firm pressure against the bleeding surface.

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Aggravated Uræmia.—The pregnant woman is peculiarly liable to a form of desquamative nephritis, which probably depends in part upon the hydræmia attendant upon utero-gestation, and in part upon direct pressure of the enlarging uterus upon the kidneys and their blood-vessels. This condition, which marks its presence by albuminuria, anasarca, and the cerebral and gastric symptoms ordinarily attendant upon uræmia, has been appropriately styled puerperal nephritis. Unlike ordinary nephritis, and like that which results from scarlatina, it is usually ultimately recovered from. When complicating utero-gestation, however, this form of nephritis proves the most fruitful of all the sources of convulsions, cedema of the lungs, and puerperal mania. It develops generally after the sixth month, and becomes aggravated as the uterus continues to enlarge and exert greater pressure upon the kidneys. Sometimes, however, it does not appear till the end of the eighth month, when the danger to the patient steadily increases until the uterus has been emptied. This condition often calls for premature delivery, in order that the woman's blood may not become more and more impure, as greater and greater pressure upon the kidneys occurs; that the daily increasing risk of convulsions may be avoided; and that the child, in danger from the poison accumulating in its own as well as its mother's blood, may effect aëration by some other means than the contaminated placenta.

I have not space, nor do I deem it essential even if I had, to

enter here upon the subject of statistics as applied to the proportion of women affected by puerperal nephritis who escape the evils which I have mentioned. It will answer my purpose, in addressing a body of practical physicians, to refer merely to a fact, which they all know as well as I, that a large number of women, who suffer from all the symptoms of puerperal nephritis, escape those results of blood-poisoning to which I have drawn attention. To place before them as clearly as possible the fact that I do not advocate premature delivery merely because this complication of pregnancy exists, I would divide all the cases of the affection into three classes :

1. The class in which only a cloudiness of the urine develops under heat and nitric acid, and in which only slight anasarca and nervous disturbance exist. For this, no other interference is usually necessary than stimulation of the intestinal and cutaneous secretions, steady and systematic examination of the urine, and avoidance of tight clothing, nitrogenized food, and habits of luxury.

2. The class in which a copious deposit of albumen takes place under heat and nitric acid; anasarca to a moderate degree exists; and gastric and cerebral symptoms show the influence of retained renal secretions to such an extent as to create considerable annoyance. For this class the general management already indicated should be pursued; the urine should be carefully examined every third or fourth day during the last two months of pregnancy, so that any increase of renal congestion might at once be recognized as an indication for interference, and the patient be delivered under chloroform.

3. The class in which the urine treated by heat and acid undergoes almost complete coagulation; excessive anasarca exists; the stomach, brain, and nervous system sympathize; and tendency to coma is denoted by constant desire for sleep. So long as cases of the first class keep within their legitimate bounds, they do not call for premature delivery. Even while those of the second class keep within their limits, they may require it, but do not of necessity do so; but in the third class this resource will always offer itself as a haven of safety for both mother and child. To express this more concisely, I would say that the first class *very rarely*, the second class *sometimes*, and the third class *always*, calls for the induction of premature delivery.

For this indication I have induced premature delivery three times. All the mothers recovered, and two of the children. One child was known to be dead at the commencement of the process. I shall give very short notes of these cases :

CASE I.—Mrs. B., a multipara, aged thirty-two, had lost her father, mother, and one sister, of Bright's disease, and in her only previous labor had suffered from convulsions caused by puerperal nephritis. She advanced quite well to the seventh month, when suddenly the gravest symptoms of uræmia developed themselves. By general management she was carried to the end of the eighth month, when she could, without straining the point at all, be classified in my third group. At this time I used the warm douche at mid-day, separated the membranes by a silver catheter two hours afterward, and at 6 P.M. introduced Barnes's middle-sized dilator. At 7 P.M. this was removed, and a gum-elastic catheter introduced to the fundus uteri. This soon excited labor pains, and in three hours a large girl was born. The mother was delivered under chloroform. Both patients did well. (Space allows us to insert but one.—Eds.)

Excessive Vomiting.—This condition, usually existing as a morbid state before the fourth month, much more frequently demands abortion than premature delivery. Sometimes, however, it continues throughout pregnancy, or, as in the subjoined case, develops toward its close. I have met with but one case which has demanded the procedure which now engages our attention. The following notes were kept for me by Dr. Sproat, house-physician of Bellevue Hospital:

CASE I.—Honora Curtin, an Irishwoman, married, aged about thirty-one, a domestic, was admitted to Bellevue Hospital, June 8th, 1869, and in the absence of Dr. Elliot came under the care of Dr. Thomas, who was replacing him. On entering the hospital she thought herself a little more than six months advanced in pregnancy, having menstruated last in December, 1868. Four days before entrance the patient was attacked with vomiting, which she at first attributed to abusive treatment by her husband, although she afterward denied it. This vomiting had continued night and day, at intervals of not more than ten minutes. After her admission to the hospital all nourishment was given by the rectum, as the stomach could retain nothing.

All efforts at controlling the vomiting having failed, and the patient becoming constantly weaker, on the evening of June 10th she was anesthetized by ether, and premature delivery induced by Dr. Thomas. The os uteri was dilated manually, a single finger being first introduced, and afterward two, which were then separated as widely as possible. The dilatation was completed by the use of Barnes's largest dilator, and the child delivered by traction upon the feet. The whole operation was accomplished in twenty minutes. The uterus contracted well, the placenta coming away immediately. The child was alive, but survived only about four hours. The vomiting ceased on the second day after delivery, but the urine when tested gave signs of renal disease. The patient was discharged July 2d, apparently well.

I have met with no other case in which artificial delivery has been accomplished so rapidly as in this. The operation, which was performed in presence of Dr. Nott, of New York, Dr. Wilson, of Baltimore, and the house staff of Bellevue Hospital, occupied precisely twenty minutes, and was completed, without

violence, with safety to the mother and child. It is true that the child died in four hours; but, when it is remembered that it was but six months advanced, this is not astonishing.

Placental Apnœa.—In a certain number of women a fatty, calcareous, or syphilitic degeneration affects the placenta one or two months before full term, and in repeated pregnancies destroys the lives of the children. Under these circumstances, where the intra-uterine lung, the placenta, becomes decrepit and inefficient, the indication for premature delivery, which enables the child to breathe by air instead of fluid, to live like a mammal and not like a fish, is very clear. The symptoms which notify the ob-tetrician when to interfere are: enfeebled movements on the part of the child, enfeebled heart-beat, and approach of the time when previous infantile deaths have occurred.

Commencing Epithelioma.—Pathologists now draw a broad line of distinction between the two great varieties of malignant disease which may affect the tissues of the uterus. First, we have true cancer, the removal of which is useless, because it invariably returns; and second, we have epithelioma, which, if removed in its earliest stages, may never return. Either form may develop in the pregnant uterus. If it be the latter which is discovered, it is recommended to empty the uterus and amputate its neck. I have never done this; but, to give a clinical example of its performance, I avail myself of a case presented by my colleague Prof. Jacobi, before the New York Obstetrical Society, and published in the proceedings of that body (*see AM. JOURNAL OF OBSTETRICS, etc., Vol. I. No. 1. Page 83*):

Death of Child and Consequent Septicæmia.—When a child dies *in utero* during the latter months of pregnancy, it is often retained, usually without injury to the mother, until full term, and then expelled. So surely may we calculate upon this issue, that interference is not considered justifiable. In rare cases, however, great constitutional disturbance is set up, and a low grade of blood-poisoning demonstrates its presence. I have met with but one instance of this, which I now give in illustration:

CASE I.—N. P., a handsome young American woman, aged about twenty-five years, the mistress of a gentleman of this city, sent for me at the eighth month of pregnancy. I found her suffering from hectic fever, which came on every afternoon, and which was followed by profuse sweating, which lasted all night, saturating her night-clothes, and exhausting her excessively. Upon examination I found that she carried a child *in utero*, which was evidently still, and, as she positively asserted, had been so for a month. Strongly suspecting that a criminal delivery had been attempted at the seventh month, which had failed to produce expu'sion, but succeeded in destroying the life of the fœtus, I refused to interfere, but watched the case for two weeks. At the end of this time the patient was so much prostrated

by constant vomiting, profuse sweating, and recurrent attacks of fever, that I feared to delay longer, and at the eighth and a half month brought on delivery. A putrid child was expelled, upon which I could discover no signs of injury. After delivery, the mother was very ill with obscure typhoid symptoms, but ultimately entirely recovered.

Threatened Death of Child.—I have already stated that in women who habitually suffer from disease of the placenta, and in consequence bear still-born children, the induction of premature delivery is decidedly indicated. If the life of the viable child be threatened from any other cause, the same remark holds true. The following conditions are examples of those which most frequently call for the operation in this connection: accidental hemorrhage or uræmia existing in such degrees as not to endanger the mother, but to jeopardize the life of the child; a blow upon the abdomen; a fall exerting its direct force upon any part of the body, and by *contre-coup* affecting the uterus and its contents; or any other influence which impairs the safety of the child without seriously implicating that of its mother. I give one instance in which the operation was resorted to for the fulfilment of this indication:

CASE I.—Mrs. P., a healthy multipara, had advanced to the seventh month of pregnancy without developing any unpleasant symptoms, when suddenly all those which I have enumerated as bringing a case into my second class under the head of uræmia presented themselves. Dr. Metcalfe, who now saw her with me, agreed in the propriety of limiting our treatment to general means, and keeping the case under strict supervision until the eighth month was arrived at. Then, if indications pointed to the necessity of delivery, it was to be induced. I saw the patient twice or three times every week, examined the urine regularly, and saw with pleasure that no increase of bad symptoms occurred. About one week before the end of the eighth month, Mrs. P. sent for me and told me that the movements of her child were becoming very feeble, and that she felt sure it was growing weaker daily. I found the foetal heart almost inaudible, and could discover no movements of the fœtus upon prolonged examination. Dr. Metcalfe saw her on the next day, and, corroborating these observations, advised immediate delivery. We accordingly met at the patient's house at 8 p.m., and, after using the warm douche for half an hour, I introduced the smallest of Barnes's dilators, and in an hour the first stage of labor was accomplished. But the uterus could not be excited to action for a length of time, even by the most energetic urging. Uterine catheterization and the use of stimulating enemata failed to cause the second stage to inaugurate itself. On the next day, however, about 10 a.m., uterine contraction occurred, and a male child was easily and rapidly expelled. To my great disappointment it was still-born. The fears of the patient had evidently been well founded, and interference had come too late, prompt as it was.

Approaching Death of the Mother.—I beg to draw attention to the fact that I do not, in stating this indication, speak of threatened death or prospective death. From my stand-point I am

supposing the mother beyond the hope of recovery, and in such a condition that the vitality which remains to her may be legitimately exhausted in an effort to save the life of her offspring. As examples of this condition I would enumerate the last stages of phthisis, cancer, aneurism of the aorta, Bright's disease (not puerperal nephritis), cerebral disease, etc. In illustration I give the following :

CASE I.—Mrs. C., a multipara, weighing about two hundred pounds, forty years of age, and previously in perfect health, sent for me very hastily, in the absence from the city of Dr. Metcalfe, her ordinary attendant. I found her in great trepidation, crying, and declaring that she was sure she was going to have a fit, from the fact that she had suddenly been taken with a violent headache, vertigo, ringing in the ears, and disordered vision. The flowers which constituted the carpet pattern were, she said, rapidly revolving, so that she dared not look at them. Her pulse was full and bounding, face suffused, eyes projecting, and vessels of the neck distended. She lived very near my residence, and, obtaining a phial of her urine, I hastened home to test this and get a lancet. In twenty minutes I returned to her house, and found that in the short time of my absence she had had one violent convulsion. This had evidently caused the rupture of one of the vessels of the brain, for almost complete hemiplegia existed. Drs. Edward Delafield and Charles Henschel at this moment entered the room, and with their sanction I drew about a quart of blood from the arm, but Mrs. C. remained comatose and hemiplegic. No other convulsion occurred, all the symptoms pointing to serious organic lesion in the brain, and the patient behaving like one in ordinary apoplexy. Dr. Metcalfe returned in forty-eight hours, and took charge of her, I seeing her only occasionally. On the fifth day of the attack it was evident that she was sinking rapidly, and, as the child, which was just at the seventh month of intra-uterine development, was living, it was determined to deliver it. In accordance with this decision, I easily and rapidly dilated the cervix with Barnes's dilators, performed bimanual version, and delivered a living child, which has since grown to be a large and very vigorous girl. The mother, who was completely comatose and almost moribund at the time of the operation, died in the course of twelve hours. I neglected to state earlier in the history that the urine which I obtained on the day of the convulsion became absolutely gelatinous under heat and nitric acid.

In this case, as we felt sure that a cerebral vessel was ruptured, we did not bring on labor earlier for fear of increasing the effusion. It was finally induced at the expense of the rapidly-failing strength and prospects of the mother, in the interest of the child.

Amniotic Dropsy.—Sometimes the amnion, which ordinarily secretes a limited amount of fluid, takes an excessive action and distends to a dangerous degree the uterus, which, in consequence, interferes with the physiological action of the abdominal viscera, the diaphragm, lungs, and heart. The diagnosis of this condition is always obscure, but in some cases may be made by the existence of a very large and fluctuating uterus, great obscurity in sensation of foetal movements by the examiner, excessive

dyspnoea, and tendency to syncope. The diagnosis being made, the only means by which a continuance and increase of these dangerous symptoms can be avoided is the induction of premature delivery.

Previous Rupture of the Uterus, or Performance of the Cæsarean Section.—After traumatic solution of continuity in the uterine fibres perfect union may occur, and utero-gestation subsequently proceed to full term. But the violent efforts demanded from the uterine fibres for expulsion of the child make the risk of a second rupture very imminent. Where such an occurrence has taken place, therefore, it may become advisable to avoid prolonged effort during the first stage by accomplishing cervical dilatation by means of Barnes's dilators, and during the second by the forceps or bimanual version.

Previous Difficulty in Deliveries of large Children, or of Children with ossified Sutures.—When a woman has suffered in previous labors from one of these causes, the induction of labor two or three weeks before full term may alter the entire phase of the process, and avoid dangers for both mother and child, which would otherwise be inevitable.

Excessive Accidental Hemorrhage, if not controlled, would prove not only dangerous to the mother, but to the child. When ordinary means do not check it, it would evidently be proper to empty the uterus prematurely, in the interest of both patients.

Tumors obstructing the Pelvis create in less degree the dangers attaching to deformity of this canal, and, for the same reasons which would warrant premature delivery under those circumstances, it would be indicated here.

This paper has already assumed such proportions that I am unwilling to detain the Society by adding to it, further than to recapitulate the cases reported, and make a few remarks upon the management of the prematurely-delivered child. My experience in the induction of premature delivery extends to thirteen operations. Of these—

- | | |
|---|---------------------------------------|
| 2 | were performed for deformed pelvis. |
| 4 | " " " placenta prævia. |
| 3 | " " " uræmia. |
| 1 | was performed for excessive vomiting. |
| 1 | " " " septicæmia. |
| 1 | " " " threatened death of child. |
| 1 | " " " approaching death of mother. |

Of the children, ten were delivered living, of which number two died subsequently; one delivered at the sixth, and one at

the seventh month. Of the mothers, one died. Of the three children delivered still-born, two were known to be dead before the operation was performed; and the mother who died was supposed to be moribund before interference was established.

One reason for the mortality of premature children is to be found in their inefficient heat-making powers. If such a child be washed, wrapped in flannels, and treated as one at full term ordinarily is, it may die when a different plan might have saved it. Prevent a child at term from having its animal heat abstracted, and it will supply itself abundantly; but to the body of the premature child extraneous heat must be added to keep it from dying of cold. To carry out this idea practically, I do not allow a prematurely-delivered child to be washed for a week or more, and always keep it during that time in a temperature of from 90° to 95°, thus striving to let it feel as little as possible the change of locality as far as this circumstance is concerned. It is difficult to do this, unless every preparation be systematically made beforehand. The plan which I follow I take the liberty of now displaying to the Society. It consists in having a tin tub placed within one of larger dimensions, so that from three to four inches may everywhere intervene between the walls of the two. At the upper portion of the piece of tin which holds them together a funnel is fixed, and at the lower a spigot. Into the former hot water is occasionally poured; and, when renewal is necessary, this is allowed to flow away from the latter. In the inner tub a large supply of cotton or wool is placed, and in this the child is enveloped and constantly kept until all fear as to its power of generating sufficient animal heat has passed away. Within this receptacle hangs a thermometer which indicates the temperature. No difference should be made in the management of the child in the hottest part of the summer. Even if the thermometer ranges at 95° in the room, these precautions are essential. Where it is not convenient to obtain anything else, an ordinary basket, with bottles of hot water laid in the bottom, and filled with cotton or wool, will answer the purpose of keeping the child warm.

But the prognosis as to the child must always be governed by its intra-uterine age. Little hope should be entertained if the delivery be brought on at or just after the seventh month; almost none should be indulged in before the seventh month, while a child delivered at or after the eighth month, provided its vital forces have not been depreciated by the abnormal state which has necessitated delivery, has, with proper management, almost as good a prospect of life as one arrived at full term.

The end of the eighth month, i. e., the ninth menstrual epoch, is the most favorable time for the induction of premature labor.

REVIEWS AND NOTICES OF BOOKS.

A PRACTICAL TREATISE ON THE DISEASES OF CHILDREN.
By ALFRED VOGEL, M.D., Prof. of Clinical Medicine in the University of Dorpat, Russia. Translated and edited by H. RAPHAEL, M.D., etc. From the fourth German edition. New York: D. Appleton & Co. 1870. pp. 603, and 6 plates.

WITHOUT feeling able, in the small place allotted to us, to do full and equable justice to all the several parts of Prof. Vogel's book, we mean to state, however, that we greet its appearance in the English language with no small satisfaction. We consider it as both an eminently useful and scientific book, and therefore recommend it to both students and practitioners with the greatest confidence. In fact, of all the text-books on the diseases of infancy and childhood with which we have become acquainted, it appears to us the very one which contains, in a condensed and readable form, the results of both a great number of clinical observations and of anatomo-pathological facts. We do not say, however, that the book is beyond fault and blame; we shall, in fact, have to point to a variety of chapters we should like to have seen differently treated. But at the same time, we must not forget that, of all the tasks an author can undertake, the writing of a text-book, in modern times, is one of the most difficult ones. So much the worse for the large number of authors who have, for the last decennia, tried to acquire notoriety, commencing their literary career with what ought to be the last and crowning effort of a long life spent in study and observation. The time when a specialist could pursue his course without regard to the other branches of medical science and art have long passed away. To practice a specialty, without being a thorough pathologist in general, is acknowledged to be an impossibility or quackery. And certainly, to write a text-book on a special branch of medical science or art, requires such an amount of knowledge in the many doctrines of medical science, such as acquaintance with pathological anatomy, and, at the same time, such an amount of clinical observation, that but few and very gifted men appear to have the vocation of writing a text-book. Such a work ought to be a collection of condensed monographs; but as a text-book is expected to have a chapter on every important or unimportant

subject, it requires more knowledge and more work than most men can possess or perform. We allude, for instance, to the great book of the two French masters of the pathology of childhood, Rilliet and Barthé. They have succeeded in writing a large number of monographs on subjects connected with the pathology and therapeutics of children; but they even have not been able to render their work a complete one. For there are many subjects for which the student or practitioner will look in vain in their three large volumes.

The great difficulty of composing a text-book explains the fact that very many illustrious men, masters in their art or specialty, have never attempted to condense their knowledge and the results of science in that form. Therefore, such men as have the patience or the courage to write a text-book, deserve either all the credit or all the blame for their undertaking; but also all the leniency of judgment is due to whomsoever spends his best exertions, and risks his reputation on a dangerous field. Now, as far as Prof. Vogel's book is concerned, we confess that the author can be satisfied with the result. The welcome extended to his work all over the world is flattering in the extreme degree to the manner in which he has availed himself of his facilities in the observation of children and their diseases, and of his attainments as a clinical observer and teacher in general.

The translator has, in the book before us, done justice to his work. There are a few points, however, to which we desire to direct his attention in his next edition. A translation ought to read like an original work. The frequent addition of German technical terms, in part intelligible to the German professional reader only, is, to say the least, superfluous. If they were of any use to the English reader, this reader would not require a translation at all. And further, it appears as if now and then the immediate intelligibility of the meaning of the author would be enhanced by not using his exact terms in every case. We speak, as an instance, of the chapter on "abdominal typhus." As we are more used to the sound of "typhoid fever," the change might have easily been made; and the differential points between "abdominal" and exanthematic typhus would have been the more prominent.

Of the several parts composing the work, the introduction, and the chapter on the ailments of the new-born, are certainly good. The diseases of the digestive organs are also commendable—in some portions excellent. There are a few points to which we take exception, however, selecting at random a number of articles, as we are unable to attend to every one. The chapter on *invagination* (intussusception) is, perhaps, one of the weakest in

the book; we venture to say that the author has not had many cases to make his observations on, else he might have improved on many a remark of Rilliet's and Barthé's in this respect. It is not correct, that violent pains will set in at the very beginning of the affection, nor will the patient collapse as fast as the author appears to believe indispensable. The treatment recommended by Pfeufer is certainly the proper one, *as far as it goes*; but the remarks on laparotomy (why "gastrotomy"?), as a last resort, are not justified by the facts. Prof. V. states that the abdominal cavity has been successfully opened for the purpose of reducing the dislocated bowels. The facts are different. Although we should not hesitate to perform that operation as a last resort, we ought to state that both Gerson's and Spencer Wells' cases terminated fatally. *Polypi of the rectum* are not so painful as the author states. Beside the astringent or cauterizing treatment, an allusion to the external use of *nux vomica* and the induced current would appear indicated. "*Tympanitis*" might have been tympanites. Amongst the *tape-worms* we sorely miss our old enemy, *tænia mediocanellata*, which is the dread and fear of all those who feed raw beef; and amongst the vermifuges, many of those which have proved more successful than otherwise in our hands. *Fatty liver* might have deserved a little more attention, as it is not at all an uncommon affection, and its differential diagnosis from amyloid degeneration of that organ would have been interesting.

We cannot approve of treating *typhoid fever*, *cholera*, and *intermittent fever* (the convulsive form is not mentioned) under the head of the diseases of the digestive organs. In this connection, *leucocythæmia* has found no mention whatsoever in the whole book. Cases will occur at infancy and childhood; we have seen a well-developed case in an infant of seven months. All of these affections, together with diphtheria, belong to another class of diseases altogether. The article on the latter is shorter than need be; the author justly rejects cauterization with nitrate of silver, but lays too little stress on the necessity of local disinfection, especially in the dangerous nasal variety. He praises lime water, but omits to speak of carbolic acid, which we prefer to it. The plan of treating grave symptoms under separate heads, as *vomiting*, *diarrhœa*, *constipation*, etc., appears highly judicious in a book which means to be practical, and the manner in which they are treated of is satisfactory. The chapter on *gastromalacia*, which Prof. V., like ourselves, takes to be a post-mortem change, will be found very interesting; but the treatment of fever, convulsions, lichen, eczema, impetigo, prurigo, and intestinal, bronchial, and conjunctival catarrh, under the head of *dentition*, appears

rather objectionable in our times. Nor do we believe that the chapter on the diseases of the *mouth* could not have been improved upon since the appearance of Prof. Bohn's remarkable book on that subject.

The portion of the book containing the diseases of the *respiratory* organs will be found very instructive, although now and then there will be serious discrepancies between the writer and reader. We still have that faith in the use of belladonna in the majority of cases of whooping-cough, proclaimed many a year ago in the *N. Y. Medical Monthly*. But we should not like to subscribe, with anything like the serious belief of the author, to his expectation of warding off lobular pneumonia by administering small doses of calomel. His theory on *laryngismus stridulus* ("spasmus glottidis") also appears faulty to us. We hardly remember a case (in fact only a single one) in which there was no complication with, or dependence on, craniotabes. If craniotabes was the cause of laryngismus, "it should be cured or palliated by local abstraction of blood, and by a derivative action of the bowels." We must confess that we should just as firmly believe in any other kind of malpractice as in depletion in craniotabes. The worst feature, however, in this whole chapter, are some remarks on the treatment of *croup*. Prof. V. says that "the prognosis in well-declared croup may be set down as fatal." Still the twenty-two or more per cent. of recoveries after tracheotomy are very "discouraging." The opinion that the operation is being given up on the continent of Europe because of this discouraging result is totally incorrect; to the contrary, the twenty-two cases saved out of a hundred "fatal" ones are very encouraging. And Prof. V.'s remarks on the general impropriety of operating, because of the majority of such children as were operated upon suffering from "the milder diphtheritic form," will be palatable to but very few, if any of our readers; to us "the diphtheritic form" is not "the milder" one. At all events, there is nothing in Prof. V.'s book, or in the modern writers in general, or in the merits of the case, that could induce us to change such views as we have expressed in the first (May, 1868) number of this journal.

As natural, we might go on increasing the number of critical remarks on the book of Prof. V.'s. We might add, that amongst the remedies for chorea minor we miss the best of all of them—arsenic and the galvanic current; amongst those in some forms of incontinence of urine, ergot. Amongst the causes of epilepsy we look in vain for premature ossification of the sutures and fontanelles, now uniform, then asymmetrical. And we might lay stress on a serious mistake, viz., that the author still insists on

claiming rhachitis as a disease of the osseous tissue only: **Even** the old writers of the seventeenth century, especially Glisson, to whom he alludes, knew better, and we ought no longer to consider rhachitis as anything but a constitutional disease. Moreover, we might state that, in this very article on rhachitis, the author refutes his own theory concerning laryngismus, inasmuch as he connects rhachitis of the cranium and laryngismus. But, after all, we return to our above opinion, that we shall hardly find a text-book anywhere, or on anything, that would not allow of remonstrances. This much is certain in our mind, that we do not know of a compact text-book on the diseases of children more complete, more comprehensive, more replete with practical remarks and scientific facts, more in keeping with the development of modern medicine, and more worthy of the attention of the profession, than that which has been the subject of our remarks.

A. J.

ON THE WASTING DISEASES OF INFANTS AND CHILDREN. By EUSTACE SMITH, M.D., London, Member of the Royal College of Physicians, Physician Extraordinary to His Majesty the King of the Belgians, etc., etc. Philadelphia: Henry C. Lea. 1870. 8vo., pp. 195.

By many of our readers this book has doubtless already been read as reprinted by chapters in a supplement to the "*Medical News & Library*" of 1869, and we venture to say that there was not one of them who did not place a high valuation on the individual chapters, containing as they did so much instruction and practical information.

The first twenty-five pages of his book the author has devoted to an "Introduction" on the general signs of wasting, and the points of importance in the diagnosis and general treatment of this grave disorder.

Commencing with Chapter I., we find the special causes of wasting taken up in the following order:

I. Simple Atrophy from Insufficient Nourishment, II. Chronic Diarrhœa, III. Chronic Vomiting, IV. Rickets, V. Congenital Syphilis, VI. Worms, VII. Chronic Tuberculosis, VIII. Chronic Pulmonary Phthisis. Each of these subjects is carefully considered in regard to their complications, causes, anatomical characters, diagnosis, prognosis, prevention, and treatment. The chapters deserving of special mention are those on "Atrophy from Insufficient Nourishment;" "Chronic Diarrhœa," "Chronic Vomiting," "Syphilis," and "Worms." In the former will be found sterling advice as to the food of the infant, and directions for artificial feeding, which Dr. S. enjoins

should not be resorted to except from the most urgent necessity, as when the mother is unable to nurse the child and a wet-nurse cannot supply her place. Here we also find directions as to the time and method of weaning, and the treatment of the numerous ailments which often follow this important change in the infant's life. Indeed, we cannot but think that much good would ensue if this chapter were studied by every mother, for they would then know how to prevent much of the sickness incurred by their children, and which in very many instances arises from their total ignorance of the most trivial points as to their care.

The chapters on Chronic Diarrhœa and Chronic Vomiting may be called excellent. The directions which we find for the prevention of the first-named disorder are such as have been found valuable in our experience, and strict attention to which is absolutely necessary before we can expect to get a mastery over the disease.

We wish we could lay before our readers many important portions of this excellent treatise, but space will not allow us. We are therefore obliged to content ourselves with recommending to the profession this valuable book, which they will find capable of affording much reliable information for the reinvigoration of many a wasted little one. D.

THE HISTORY OF NINE CASES OF OVARIOTOMY. By T. GAILLARD THOMAS, M.D., Professor of Obstetrics and Diseases of Women and Children in the College of Physicians and Surgeons, New York, etc. From Bellevue and Charity Hospital Reports. pp. 27.

DR. THOMAS' paper is an exceedingly excellent one in many features, and discusses a subject of great universal interest. Before relating his nine cases Dr. T. gives some valuable remarks on the operation, especially in regard to the influences which tend to keep up the high rate of mortality which attends this operation. Among these he thinks "must be mentioned the necessity for cutting into the peritonæum, exposing this delicate and important structure for a long time, and often leaving vessels open upon its surface, or within its cavity, which pour out blood that serves as material for putrefaction. Second, the difficulty of diagnosis must not be lost sight of. It is safe to say that in no pathological condition for which surgical procedure is adopted, not excepting that of internal aneurism, is this difficulty equalled."

Lastly, Dr. T. expresses it as his opinion that the mortality is greatly increased by the fact that "the operation of ovariectomy is at present often performed by men inexperienced in the diagnosis and treatment of ovarian tumors. The statistics of some of the

best operators prove that they have been progressively successful as they have advanced in experience, and learned to avoid the dangers attendant upon the procedure, and we must conclude that they who operate for the first or second time must damage the array of reported cases and increase the rate of mortality. I know full well that it may be objected to this statement, that if inexperienced men never operated, where would our supply of new surgeons come from? In reply to this I would remark, that if the professional relations of any man make it likely that he will be frequently called upon to perform this or any other operation, he should prepare himself to meet the demand upon him; but I cannot think it incumbent on any practitioner, upon whom no such demand is likely to be made, to have performed one or two operations of ovariectomy.

Our space compels us to conclude this unsatisfactory notice of so valuable a contribution to gynecology by quoting the following closing paragraphs:—

"In this report are embodied nine cases of ovariectomy. *Five of them resulted favorably and four unfavorably.* Out of the four unfavorable cases, two were instances of so-called alveolar cancer, one a solid tumor, and one a cyst, the whole of which could not be removed. Six cysts were operated upon. Of these, five recovered, and that which ended fatally was a case in which one-fifth of the sac had to be left in the abdomen.

"The operation of ovariectomy was only in two cases preceded by that of paracentesis. This was due to my desire to avoid an additional risk to my patients. I believe, however, that, in thus avoiding paracentesis, I committed a grave error. A more frequent resort to it would have cleared up many obscurities as to diagnosis, and thus prevented resort being had to ovariectomy in at least one of my fatal cases. My experience thus far will induce me, in the future, to resort to it much more generally than I have done in the past."

D.

BOOKS RECEIVED.

THE following works we are unable to notice individually, on account of the press of other material. We, however, do not hesitate to mark them as possessing great merit, and as highly instructive on the special subjects of which they treat:

ON AMPUTATION OF THE CERVIX UTERI IN CERTAIN FORMS OF PROLAPSIDIA, AND ON COMPLETE EVERSION OF THE CERVIX. By ISAAC E. TAYLOR, M.D., Emeritus Professor of Obstetrics, etc., in the Bellevue Hospital Medical College, etc., etc. New York: D. Appleton & Co. 1869. pp. 69. 14 woodcuts.

ON THE SPONTANEOUS AND ARTIFICIAL DELIVERY OF THE CHILD IN FACE PRESENTATIONS, WITH THE CHILD POSTERIORLY. By ISAAC E. TAYLOR, M.D., etc., etc. New York: D. Appleton & Co. 1869. pp. 26. 8 woodcuts.

OBSTETRIC APHORISMS; FOR THE USE OF STUDENTS COMMENCING MIDWIFERY PRACTICE. By JOSEPH G. SWAYNE, M.D., Physician-Accoucheur to the Bristol General Hospital (Eng.), etc. From the Fourth Revised English Edition, with additions by EDWARD B. HUTCHINS, M.D. pp. 177. 16 woodcuts. Philadelphia: Henry C. Lea. 1870.

CASES IN ORTHOPÆDIC SURGERY; WITH PHOTOGRAPHIC ILLUSTRATIONS. By BUCKMINSTER BROWN, M.D., etc. Boston: James Campbell. 1869. pp. 23.

A HANDBOOK OF THERAPEUTICS. By SIDNEY RINGER, M.D., Professor of Therapeutics in University College (London), etc. New York: Wm. Wood & Co. 1870. pp. 486.

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